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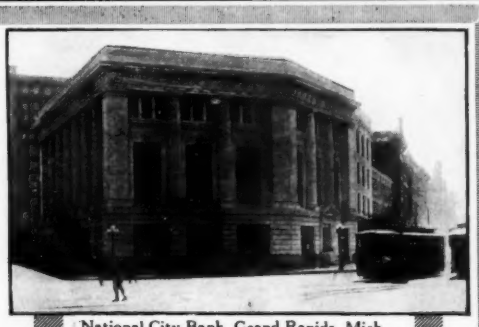

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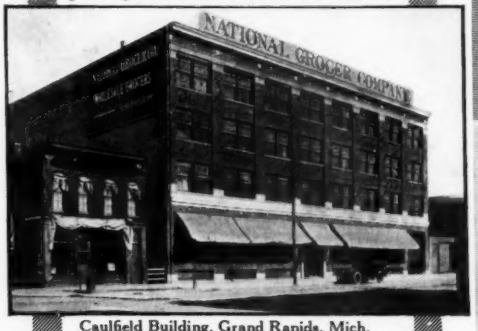

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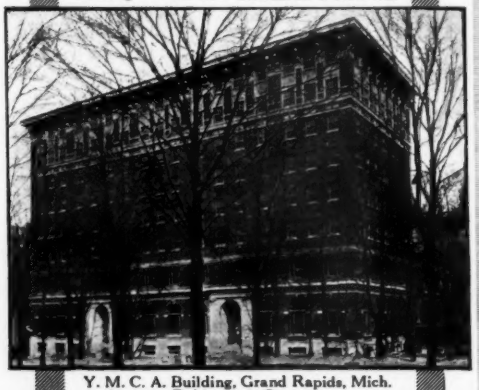

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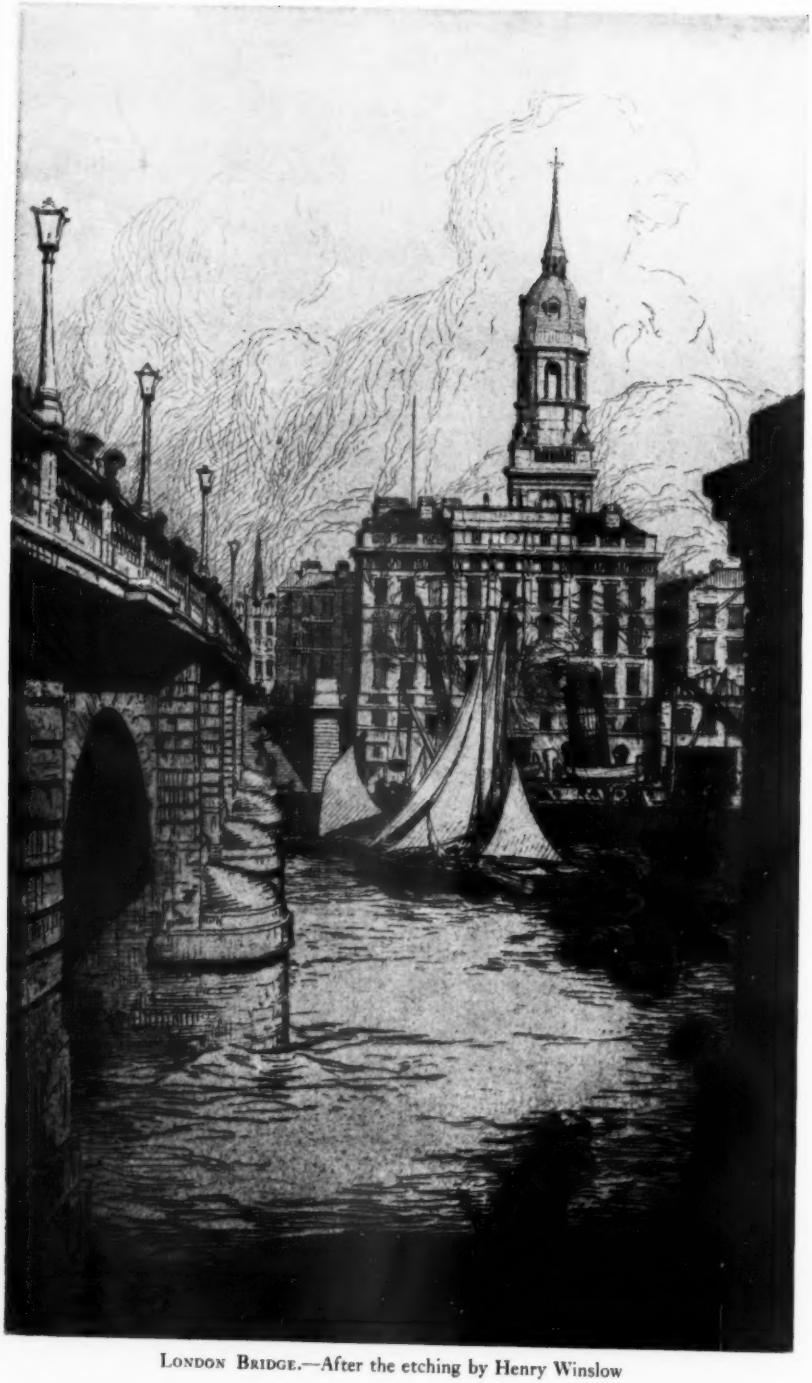

LONDON BRIDGE.—After the etching by Henry Winslow

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Shadows and Straws

TO those to whom art has a deeper interest than is aroused by its consideration as a vague and detached element in the extraordinary intensity of modern life—a sort of esthetic debauch suitable for emotional vacations, or a decorative appendage to something useful or practical—the increasing volume of writing which deals with art as something born and nourished in great communal transformations and aspirations may be of deep import. The war has been a great stimulating factor in the appreciation of spiritual values. It has led to searching questionings—to penetrations into unexplored depths of the spirit—to outpourings of poetry in which battle no longer passes as the field of super-glory, but as a dire symbol of the somber failure of humanity. There are those who believe that, as one of the results of this frightful upheaval, art will again burn with a steady and glorious flame; that mankind shall once more be guided by that flame in its quest of the answer which war has shown not to lie in the direction we have been going. Others look for a new religious awakening, of which art shall be one resultant. Among these we may perhaps place Mr. Cram, who writes in the February *Atlantic* on "The Second Coming of Art."

His passionate arraignment of the nineteenth century is painted in broad strokes. One reads with the sensation of being carried from pinnacle to pinnacle, of looking down from great heights upon a world lost not only in the service of Mammon, but

> "in the painting of crazy *isms*, in the architecture and crafts called *l'art nouveau*, in the drama of Broadway and the 'movies,' in the music of Strauss and Schönberg and their like, viciousness, deliberate and bold, covering its technical incapacity with the cloak of esoteric superiority. The taste of the Tired Business Man," says Mr. Cram, of the drama, "is now the standard and the directing cause of whatever is produced; and whenever his fancy rises a degree above the silly and the humorously salacious, it soars only into the dubious realm of pathology plus pornography. No catastrophe so complete, no dêbacle so humiliating has ever been recorded in any art in so brief a space of time."

LET THOSE WHO REBEL at the severity of these indictments—and architecture, painting, and sculpture come in for their share—turn to the article by Theodore Dreiser, on "Life, Art and America" in the *Seven Arts* for February.

Here the sensations of precipitous heights are reversed. One walks on the low levels and looks up at the pinnacles as they rise sheer above the "limbo of nothingness or failure,"—the scrap-heap into which hypocrisy, conventionality and a flabby educational system have combined to pitch all the creative and imaginative qualities of men and women. For Mr. Dreiser's indictment of America is no less.

> "America could be described as the land of Bottom the Weaver," says Mr. Dreiser. "And by Bottom I mean the tradesman or manufacturer who has accumulated wealth and, in consequence and by reason of the haphazard privilege of democracy, has strayed into a position of counsellor, or even dictator, not in regard to the things about which he might readily be supposed to know, but about the many things about which he would be much more likely not to know: art, science, philosophy, morals, public policy in general. . . . All merchants, judges, lawyers, priests, politicians—what a goodly company of Bottoms they are. Solidified they are Bottom to the life."

However acute may have been Mr. Dreiser's resentment over the suppression of "The Genius," one feels sure that it was not that

experience alone which has led him into an indictment which has the curious effect of agreeing with Mr. Cram's, while also revealing a vigorous defense of that very freedom and liberality which Mr. Cram so scathingly condemns. One scents in these differing points of view the eternal struggle between those who would censor, Bowdlerise, expurgate, and define, and those who would let the world take its chance. Mr. Dreiser writes as a defender of man's right to "question the things that he sees—not some things, but everything," and to ask of life its source and import. "Else why a brain at all?" he asks.

One suspects, however, that Mr. Dreiser really believes with Mr. Cram, that "Art is not a product, but a by-product," as we have dared to contend not once but many times since the Journal began. But while Mr. Dreiser would not tamper with the by-product by setting limits to the methods and materials which may go into the product, one feels that Mr. Cram has very definite and very different ideas on that subject, for he says:

> "Now we will go back, in order that we may go on when the world is made new again after the awful readjustment is completed. Wealth and plenty and efficiency and peace have failed as they have always failed to produce art-bearing conditions. We shall not be troubled by these in the future. We shall have our chance to try what hard, clean poverty will make possible—a poverty that will be such only in material things, for under a new righteousness, a sane philosophy, a restored religious sense, it will become the creator of character, the director and guardian of clean, hard, wholesome and joyful life. All of the great art of the past has grown out of such life as this, even though its loftiest impulse came just after the primal impulse had begun to fail, and corruption of manners and morals had set in. If the war does its work, we may hope for the same again, and so hoping we see the dawn of a new day for art."

A "sane philosophy" is not explained, but the "restored religious sense" to which he refers is later qualified as an "authoritative and universally accepted religion," which would seem to indicate no definite goal in the past toward which we are to retrace our steps.

And Perhaps in Admitting that the "clean, hard, wholesome and joyful life" could not stay the corruption through which art reached its loftiest impulse, and in expressing a doubt as to whether the war will "do its work," there may lie further admissions that Mr. Cram was not too sure as to just how far we are to take our way backward; not does he make it quite clear why we shall not again end in that corruption of the morals and manners of the hard, clean life. He almost leaves us to believe that the greatest in art is only produced through such corruption, and gives us no hope that the turning backward for which he longs would result in more than another cycle of greater or lesser intensity with another concluding dêbacle. May it not be that we shall learn to take our way forward, some day, and that instead of losing ourselves in the paths of those who so persistently wish to define life, we may wander into the broader way where we can deal more rightly with that mystery which seems so simple to so many, yet which forever eludes every net in which one tries to catch it and overflows every channel in which one tries to confine it?

There are those who think that the great day for art is not coming through the restoration of that religious sense which lost its touch with life when it institutionalized itself as a means of authority and power, but in the religion which shall look for the answer to all its questionings in the faces of men; in faces that endlessly pursue the unfindable truth; in faces which are not molded to one image and to one definition, but which, forever changing with the quest, are like spirit waves upon the surface of that sea which still remains a fearful and wonderful expanse.

What saith Edward Carpenter?

> "Thought you, frail phantom roaming by the shore,
> Gazing wide into the night—a stranger where you had fancied yourself most at home—
> Thought you that this great Ocean was to be like an ornamental water in your garden?
> Thought you that you knew whence these convulsive waves?—the winds that stirred them, the deeps where they were born?
> Think you they weep your sorrows alone, or shake the ground only under your feet?
> Not so! not so!
> But ever flowing from afar,
> From the immeasurable past, from the illimitable shores of human life forever flowing—on its margin passionately breaking,
> With strange uncipherable meanings, whose words are the myriad years,
> With speechless terror and amazement to the children beside it,
> With amazement of expanded identity, and the inflow of immortal swift-riding purposes, incontrollable, leading straight to death,

In living procession out of the deep—O Child! to you they come,
These waves of your great heart, rolling flowing without end:
Through long long ages, under storm and sunshine, by day and night, in indomitable splendor rolling,
At your feet now mournfully breaking."

And from the ceaseless restless rising and falling of those waves—from the storms even as from the calms—life is translated into the language of art—the language which is its own beginning and ending, for it is definable only by life itself—and the definition of life is life.

CONTRASTED WITH THESE two contributions to the theory of life and art, the clear and scholarly analysis of "Religion and Art" by Vernon Lee in the February *North American Review* seems, at first, so seriously studious as to make one fear that it will miss any vital contact—but it does not miss, by any means. Here are no pinnacles. One walks with the measured and careful tread of the scholar, although one feels that it is not only as a scholar that the question is put:

"How has a work of art come to be just what it is and not what some other work of art happens to be? What is its origin? What the genealogy, the pre-natal history, the embryology of this wonderful thing which, at first sight, seems sprung like Pallas Athene, fully equipped and irresistible, from the creative will of a kind of God?"

In seeking a method of approach to these questions, we are reminded that the old philosophy of art is now sadly out of date, and that

"the new and as yet far from adequately appreciated factor in the problem of style is no other than the Principle of Evolution applied to art. It means the recognition of the heredity and transformation of artistic forms; and this evolutional conception implies a method which deals with the types and elements embodied in every work of art as the biological anatomist deals with the organs and tissues of the body, and the embryologists with their pre-natal development. This is the greatest achievement of recent archeology, this is its contribution to the question of how any work of art has come to be what it is, and indeed how art has come to be at all; although the complete answer will be obtained only with the coöperation of another half-fledged but far different study: the experimental psychologic study of the variations of individual psychic types and their connection with the variations in bodily functions."

In answer to Mrs. Strong's argument, as deduced from her lectures on Apothesis and Late Roman Art, that "a definite kind of artistic conception is generally explicable by the requirements of different religious beliefs and practices," it is pointed out that

"unless Art had its own growth, heredity and evolution, religious beliefs, however much armed with the life-and-death power of setting the artist his task, would never have elicited the particular response constituting the characteristics of various historical and national styles of Art. It needs some equally learned and penetrating, some perhaps more synthetically thinking, future archeologist to tell us not the share of religion, and of the rest of the Historical Environment, in selecting Art's native possibilities and influencing its course; but the share of Art in determining, though in less obvious manner, the character and the attitude of that Religion and the rest of that Historical Environment."

In thus returning to the question, "Why has a work of Art come to be just what it is?" we are clearly led to see that "We have arrived in the presence of the great, the mysterious question of the individual artistic endowment and its relation to the general temperament and life of the individual artist."

In other words, one returns to life!

One other paragraph is well worth quoting from this discussion, which is absorbingly interesting, and which betrays the fine scholarship born of a lifelong devotion:

"What plays the part of *heredity* in art is *tradition;* art's growth is due to *imitation* and *invention;* and the current of art's life is the relation between pupil and master; also between the craftsmen of each generation and the public whom their immediate predecessors have accustomed to appreciate and expect certain artistic effects and not others. And the variation in this very real though wholly spiritual life of every art, is due to the psychological necessities of human nature, the necessity for refreshing attentiveness by alterations in aim and means; the impossibility of seeing and feeling twice over alike; the new generation's imperative need to approve itself equal to the old one; the measureless powers of curiosity, of boredom, of wilfulness, of self expression; also of accidental suggestion; and last but not least, of genius perpetually conflicting with the safety and warmth of familiarity: in fact all the psychological necessities of life, which can reproduce itself only after having been produced and nurtured by other life. I have thus spoken of art in biological terms. It must be remembered, nevertheless, that whatever the limitations of bodily heredity, the heredity of spiritual entities like art consists precisely in the storage and transmission of *acquired* variations; and that the action of selection, in this case *social selection*, bears precisely upon such perpetually transmitted potentialities of change. This social selection is carried on by the historical environment; which, in the case of art, means the aggregate of all the other spiritual entities, religion, law, manners, philosophy, science true or false, each subject (like art) to its own processes of heredity and variation, each acting on, and being acted on, by the other; and all

united by that economic pressure which means that ideas and habits, styles and schools, even like concrete individuals, receive permission to live and reproduce only by accomplishing the tasks to which they are set."

MR. LEO STEIN, in a little article called "Meanings," also in the *Seven Arts* (February), states the case for art in a very simple and in a delightfully human way:

"No large factor in life can be explained except upon the basis of a very fundamental need, and art is so great a factor that the need must be equivalently great. Development of mind in man must have produced a gap between his former and his later needs that only art could fill. Science was the organization of his knowledge, and art the adding of completeness to experience, the rounding out of what in life was fragmentary and unsatisfying." . . .

"Art is therefore very close to common life and is life's idealization. It is also life's objectification. Instead of being merely lived, life is reviewed, revised, communicated. Things temporally distant are brought near and are reanimated by the imagination. Inanimate things are given a conferred activity. . . .

"Art in the present social conditions suffers because, in general, we are neither simple enough nor sufficiently evolved. The simple minds are too sophisticated to take in simple-wise their simple things, although they cannot rise to the subtler and more complex. The simple tale is made over like a peasant girl whose father has struck oil. The trappings of civilization become decivilized by her use. Only growth can remedy the matter, and it is hard for the newly-rich to grow. When you can buy the semblance, why wait for the reality?" . . .

"The remedy can lie only in a sounder education and in a consequently deeper integrity. We all need more than we can individually produce. None is so richly creative as to satisfy completely his need for ideal satisfactions and everyone therefore requires participation in the fantasies of others. Advisedly I say 'participation,' for in the world of art only that really exists for us in which we do participate. Education so that the appetite be pure, the palate clean; integrity that should make less possible confusion between what one apes and what one is; knowledge that aspiration only slowly grows to realization—these are the conditions of an art-appreciation that is neither debasing nor a sham."

ONCE AGAIN, what saith Edward Carpenter:

"This is my trade, teach me yours and I will teach you mine. . . .

"Wherever the sea and the land are, is my trade, and it has been known since the eldest Time: the ancient Mysteries and Oracles hinted at it, the venerable sages of India knew it, and men and women who walked this earth before all history; in the remotest stars it is exactly the same as here, and in all the circles of the intelligences whether they dwell in fire or water or in the midst of what is solid, or in the thinnest vacuum.

"Many an old woman sitting by her cottage door is far more profoundly versed in it than I am. Many a fisherman pouncing on crabs along the shores of the Mediterranean has in it long ago served his apprenticeship. If you think or desire by coming with me to know more or be better than these, you mistake me and what I have to tell you.

"Learning and superiority are of no use in the face of all this: they depart much as they came. But to come near to understanding the use of materials is divine, and he that hath never despised a weaker or more ignorant than himself is nearest to this."

MAYOR SMITH, of Philadelphia, has strongly upheld the Art Jury as a desirable factor in dealing with the physical characteristics of our communities. In vetoing a recent ordinance whereunder it was proposed to create a board of commissioners to have full control of the Independence Square group, the Mayor said:

"I disapprove the ordinance, first because it conflicts with the Acts of Assembly, and were it allowed to become law, the commission thus created could perform the duties laid upon it only by courtesy of existing departments of the city government, i. e., the Art Jury and the Department of Public Works. Further, such a commission seems to me unnecessary, in view of the fact that the Art Jury controls the character of furnishings and objects of art placed in the hall, and that the Department of Public Works for a number of years has made alterations and repairs to this group of buildings only under the supervision of the American Institute of Architects, which has so patriotically given time and valuable advice to the city authorities."

The reference to the Institute is a generous acknowledgement of the services of the Philadelphia Chapter.

THE PUBLIC BUILDINGS BILL, over which there has been so much discussion, died with the ending of the Sixty-fourth Congress, on the 4th of March. It was not considered by the Senate, which, even without the tension of the last month, would probably not have sanctioned an expenditure based upon the principles disclosed in the bill. While the country at large may be congratulated that at least some small progress has been made toward the establishment of a business policy for Government buildings, the fact remains that many necessary and warrantable undertakings are made impossible through the failure of the omnibus bill to pass. That is one of the difficulties in opposing the omnibus system, just as it is one of the factors upon which reliance is placed in framing a bill that shall be sure of passing.

The Procession

THE soft mass of luminous haze has begun to draw near. Like the faint reflection of a pillar of fire it has hung aloft in the night sky, signalling the slow movement and direction of the procession. Looking down the narrow street in which we have taken our position, we have watched the tremulous cloud grow brighter, until, hovering for an instant at the turning, the first *char* swings round the corner. Then the little street down which we look makes a picture the like of which you may not see elsewhere on this continent. It is an old street, very narrow, with mere strips of walk at the side. The edge of either walk is lined with men, women, and children. They stand—some sitting in chairs which they have brought from their shops—expectant, yet with a complete freedom from outward agitation, an utter absence of loud talking or of hoodlumism, a generous spirit of kindliness, willingness, and even wishfulness to share in the joy of the evening, and an *abandon* such as is even more unusual to find among crowds, anywhere.

Behind them a narrow lane is kept open for the slow-moving file of pedestrians, most of whom have already seen the procession as it passed uptown—where, amid the jumble of modern architecture, it completely loses its traditions—and who now are wending their way toward the Opera House. Here occurs the final scene in this great outdoor panorama—the descent of the maskers from the *chars* and their disappearance into the old building which has become so priceless a fragment of the Great Tradition. It was preserved to the city through the generosity of one citizen!

At the back of this file, which moves haltingly, one sees the little groups gathered in the doorways. These are recessed, in many cases, and the short flights of steps in the vestibules give excellent points of vantage. The faces of those who stand within reflect the oncoming glow of the flares, and their profiles are set forth, strong against the dark shadow of the doorway.

From the fringe of eager faces on the sidewalk—above the groups in the vestibules—one's eye mounts to the narrow balconies overhead. They do not make an unbroken line, for, at intervals, one notes the ugly, gaping space where one has been torn away. And these spaces are the first tragic note in the scene—they run through your consciousness with a vivid flash and for a second you are reminded that something more than a procession is passing. But only for a moment. There is too much joy abroad for any tragic note to find more than a momentary resting-place, and the ironwork of the balcony railings has already shot its shy message into your perceptions. Your eye is caught by the delicacy of its pattern and the grace of its slender curves and spirals. The figures seated or standing behind it seem a part of the century which produced it. The light plays upon their faces and causes wavering shadows to dance on the walls. And what walls! The stucco makes a background into which the years have wrought such color that they seem to have been woven into soft fabrics in greens, pinks, yellows—each rivaling the other in tenderness—each blending and harmonizing with the other until one may scarcely trace the beginning or the ending of any shade. The old absinthe house is bathed in a soft and shimmering green, and stands, like a figure with wide flowing garments, at the corner where its arched doorways have so long delighted those who are alive to the endless message of form and color.

Above the balconies and the faint gleaming of the stucco walls the eye moves upward to the roof line; free from the uniformity which would have been unpleasantly monotonous at a moment like this, it is broken by the changing heights of the facades, by gables and dormers—and into the irregular spaces the dark sky drops down and silhouettes the outlines against its blackness. And up the narrow way, peopled with expectant faces, dotted with balconies, bright with the stucco, intensely dramatic with the wavering light, the strong, sharp, shadows, the mounting smoke of the flares, the cries of the crowd, the procession moves along. For a moment you are recalled to the *chars*. The sparkling eyes of the children that gaze upon them, the little hands that beat the air nervously as the masked figures move about, the little faces so utterly oblivious to everything save these towering, gilded,

spangled, images of fairyland, all remind you that the procession is a thing which still casts its magic spell. There is nothing so fascinating in the whole spectacle as the face of the little pickaninny who is perched on its mammy's shoulder and whose eyes dance and sparkle with a joy that has passed our comprehension. The nervous rhythm of its hands echoes the rhythm of the flare-bearers as they swing along, their bodies responding to the cadence of the music, their feet not rising and falling with the beat of the march, but swaying joyously forward with the spirit of the dance. Nothing in the procession seems so harmonious a part of the whole as these flare-bearers. Their black faces gleam and shine, contrasted with their long white surtouts and cowls. They carry flares of four lights, each set in front of a rectangular reflector, and it is these smoky flames which light the *chars* and give them an interest not possible in any other way.

An hour later it is only a memory. You have followed behind the last *char*, watched the maskers alight and disappear, and the crowds overflow into the narrow streets and melt away like a sudden flood which has surged over them and subsided as quickly as it came. You walk about these old streets, now that silence has come, and their names re-flood them with the century-long procession of memory and history —Orleans, Bienville, Iberville, Dauphine, Chartres, St. Louis, Royale, Bourbon! The tragic note of those departed balconies awakens itself in your reveries. You recall one disappearance after another during the score of years in which the charm of this quarter has held you in its spell.

On the old clock-maker's house the ancient carved bracket has gone the way of so many other emblems. It once supported a two-dialed clock, visible to all who walked the street in either direction. It was surmounted by a bell upon which there sat a little man who struck the hours as they were unfolded by the wheels within. Now the little man is gone and the bell only is left. It has fallen from its once high position and has descended to the ignominy of being fastened above the dial of the other clock which is set in the face of the wall. The long pendulum behind the glass swings with the measured and inflexible step of Time, and once again you are gripped with the acute sadness that comes with the thought of this silent blotting out of a past which is so precious that you cannot understand why they are willing to let it go. As you pass the spot where the old hotel once stood you cry out with an imprecation upon the vulgar progress which could destroy so precious and irreplaceable a fabric. And unconsciously you become aware of the inexpressible ugliness of the great white building which now seems to look down with a laughing mockery at the ghastly remnant of brick and plaster. Was not that the building which should have been leveled? Now it stands—and will long continue to stand, no doubt—but only as a reproach to a careless city.

And thus you become aware of the power of that passive but relentless force by which this old quarter is slowly being crushed out of existence. The tragedy makes you almost to wish that it be quickly consummated, and that you be spared the pain of longer watching these dying struggles. Yet, may it not be that before the final agony has come—before the last of this architecture which constitutes one of the priceless inheritances of our country has disappeared—ere the hand of the despoiler has wrecked this wealth of craftsmanship in wood and iron—there may come recognition and reverence, and the knowledge that the great city of New Orleans is throwing away an asset which is beyond price—denying its responsibility to its citizens of the future—mocking the labors, the lives, and the taste of its citizens of the past?

Pondering these thoughts, the careless joy of the procession suddenly becomes an ominous, too careless thing.—C. H. W.

The Architect in War-Time

The following letter addressed to the President of the United States by the President of the Institute will indicate that the Institute is quite alive to the possibilities of usefulness in the case of a war. The matter was considered by the Board of Directors and a special committee was appointed to see in what way the profession could best make itself useful. It is, perhaps, pertinent to point out that the President of the Royal Institute of British Archi-

THE ARCHITECT IN WAR-TIME

tects, in his recent annual address, referred to the failure of the British Government properly to utilize the services of the architectural profession in Great Britain, although it must be remembered that the task of organizing British resources was a colossal one.

President Mauran's letter is as follows:

ST. LOUIS, MISSOURI, *February 21, 1917.*

THE PRESIDENT,
The White House,
Washington, D. C.

Dear Mr. President: At the time when the Engineering Societies tendered to the Government of the United States, through you, their service in investigating Industrial Preparedness, the American Institute of Architects shared the impulse to place its resources at the country's service.

Rather than act, however, on the impulse in offering indeterminate services, we have postponed our offer until investigation revealed a tangible field of effort for which our special training peculiarly adapts us.

I enclose herewith a copy of the Report made by the Special Committee charged with the investigation which closes with the recommendation that the President of the Institute be authorized to offer the services of the Institute to the President of the United States, and in extending that offer I beg to quote from the Report the following suggestive paragraph:

"A member of the American Institute has for more than a year been in charge of the design and construction of all military hospitals in France, from the temporary unit near the battle-front to the permanent hospital in the rear. Other members of the Institute have made themselves invaluable at the volunteer encampments at Plattsburg and elsewhere in this country, where their special training has peculiarly fitted them for the planning of camp-sites, sanitation, etc., and for reconnaissance work, topographical sketching and map-making."

While awaiting your pleasure the Institute will proceed to form a permanent Central Committee, which will have authority to organize subcommittees among the forty Chapters throughout the country.

Very respectfully,
(Signed) JOHN LAWRENCE MAURAN, *President.*

Supplementary to the letter, we print another letter written by a member of the Institute to Mr. Fenner, when he was Secretary of the Institute, and in answer to a request for a statement based upon the actual experiences of an architect at Plattsburg.

I applied as a deaf man of forty-eight, doubting whether I would be accepted, and was instructed to have a physical examination to save me the trip in case I was turned down by the surgeon at camp. I was accepted on certificate and eventually passed the camp surgeon. The physical examination is severe. The general work is about as hard as it could be, particularly in the hot weather; full-pack drill six to seven hours a day, open order, swamps to your waist, sliding under barb-wire and diving into cinder heaps. Napoleon, I believe, said an army traveled on its belly, but I never knew it did so much of it as they did at Plattsburg. Lectures all the time, at every resting spell, and on particular military subjects by higher officers every evening.

I arrived at camp three days before the July opening, and was the first man in my company. On reporting to my Captain, in filling out my record, I was asked what knowledge I had that might be of military use, and as I had been studying military topography for about a year I spoke of my knowledge of that. I was asked to make a regimental layout of the camp, and then a bird's-eye view of the rifle-range with detailed arrangement of troops for range-practice, and of course these were things any architect could do. After about a week of routine I was ordered to report at headquarters and was asked by the Adjutant, Major Hall, if I could make a map of Plattsburg Camp (about three miles square) and surrounding country, locating new roads, railroads, and some newly forested ground not shown on the Geological Survey which was fifteen years old. I got away with that and was then told to report to the Field Quartermaster. I had in the meantime been appointed Regimental Topographer. I was told that I was to lay out all the camps for the big hike. We had nearly 7,500 men to march eight days, a new camp every day, with all arrangements to make for food, water, fuel and transportation. We had a reinforced brigade, with detachments of field artillery, cavalry, war college, hospitals, band, motorcycle machine guns, and, strange to relate, the United States had not moved so many men on foot in such a period since 1865. High authorities declared the army would break down, but it didn't. We took nearly 30 acres to camp in, hauled 19,800 gallons of water, and used seventeen cords of wood a day for fuel. To handle a force like this across country in time of peace, when crops are uncut and fences, except in case of absolute necessity, cannot be disturbed, is something of an undertaking.

One of the most necessary things was to have the camps mapped out and ready for the troops to enter and dispose themselves in an orderly way on arrival, after fighting all the way (sham battles), and to have their food ready. Of course, in time of war you can camp anywhere in any man's wheat-field and burn his wood and fences. It became necessary then to have accurate maps showing the places for troops to enter, all regimental camps, officers' lines, kitchens, latrines, headquarters, cavalry, war college, hospitals, band, and picket-lines. My work was to go to the selected sites and survey the terrain in a military way, and then at night work up the drawing, trace it and have prints made for each staff and company officer in the camp.

Military surveying is done by pacing and compass bearings primarily. I am not going into intersection and resection, contouring, slopes, clinometer and slope-board work, but you start with a sketch-board in one hand, a compass in the other, a pencil between your teeth, and a scale any place. I shall never forget when I was first dropped in a field with hills, ravines, a stream running through it with patches of cultivated fields and a winding road at one side, and my Captain said, "I'll send for you at four; 5 per cent accuracy will do." When I remarked that I could do more accurate work with instruments and longer time he replied, "In war, 100 per cent accuracy and two hours late and we're all dead. Go to it."

Any architect or draughtsman should be able, after some practice, to make road and position sketches; it takes, of course, some little time to learn all military indications, and, what is of great importance about visibility problems, arriving at positions without being seen, and occupying artillery positions defiladed from the enemy, all from observance of the contour lines on maps. However, to proceed to my work, I managed to successfully lay out the camps, though attending drills, and company work as far as possible. I had not a single evening or Sunday free as the others did. Owing, I suppose, to my familiarity with the camp-sites, I was then relieved from my company and made First Sergeant in charge of headquarters, war college, field artillery, hospitals and band. I was ordered to go to Quartermaster stores and draw tentage, had one hundred and one things charged to me, and was given two squads of regulars, and four war-college negroes as a command, and four 1½-ton motor-trucks.

My work was to start first every morning, proceed to camp-site, erect tents with my men, see that all commands came in properly, that kitchens were properly placed, and have everything ship-shape at an early hour. I was given detailed instructions before we left, and told I would not be instructed a second time, but was expected to have the camp straight. After pitching camp, I was on duty to receive official papers, disposing of all I could without referring to higher officers, and having to turn down requests varying from a request to leave camp on account of an addition to the family, to furnishing swabs for rifle-cleaning, or to "please cash a check for $75."

At the muster out I was urged to return for the September–October hike, which I did. That was a real hike of twelve days; two days and nights the rain froze as it fell; soaked blankets, frozen pup tents to put in your packs, wet fields to lie on, and then an inch and a half of ice. I varied my getting over the ground, from 22 miles on foot, 36 on horse, motorcycle machine gun 40 miles an hour over the fields, to motor truck and automobile. I dropped seventeen pounds, I didn't know I had, but enjoyed every minute of it. I enrolled, doubting whether I could get in, as old, bald, deaf,—thinking I would be lucky if I got to be a corporal. I came out of the first camp with a rating—Regimental Topographer, First Sergeant, Sharpshooter, and ended First Lieutenant. I was recommended for Captain in first camp, Major in my second, having been studying all the time and have just learned from the War Department that I have passed my exams as Major, Engineer Corps, Officers Reserve Corps.

Now if I can do this, there are lots of other architects who should do better. I will say, however, that I have been accustomed to field-work from boyhood, shooting big game and living in the woods, often depending on what I shot, and am not troubled if I get lost for a week. I have gone into this personal end more fully than I expected, not for official use, but to show in a way what it is and what I think about it.

Now as to what an architect can do for his country: First of all his training should give him proficiency in two particular things; military topography, which is of the utmost importance in reconnaissance, and outpost work. Geological Surveys are practically 1 inch to the mile. We shall always need innumerable sketches 3 inches to the mile or greater, and need them every day as we proceed or fall back. The sketches I made were 1 inch = 100 yards.

The second branch is engineering, which includes buildings, barracks, warehouses, earth and concrete works, and lines of communication. The other branch—field-works—includes demolitions. This takes in field defences, bridges, clearances, and pontoon work, all of which is relevant to our profession. A practical problem to be solved on the ground. That is our every-day work, is it not? Instead of making plans for circulation, we must block it, and find vistas for our fire but not for that of the enemy.

One of the greatest assets the architect has in war is imagination. It is laid down by the authorities that "War is an art and not a science." Tactics is logic, tempered with imagination. Strategy is imagination tempered with common-sense. I believe no profession develops these qualities as does ours. Who were the great military engineers of history? Michael Angelo, Leonardo da Vinci, Benvenuto Cellini, and many other of the world's great architects.

How Shall We Teach Something About Art?

Three Discussions by
JOHN PICKARD, President of the College Art Association
GEORGE M. CHASE, Head of Art Department, Harvard University
FRANK JEWETT MATHER, Marquand Professor of Art and Archæology, Princeton University

EDITOR'S NOTE.—The following letters were written in discussion of the report of the Committee on Education which appeared in the Journal for August, 1916, and which dealt very largely with questions affecting University curricula. By reason of the prominence given to the subject of education at the recent Convention and the broad interest which the profession should take in the subject during the coming year, preparatory to action at the next Convention, these articles should be useful in further discussion.

The Institute Committee on Education is seriously at work in the endeavor to focus attention upon the question of how to teach art in our colleges and universities. It is not so much concerned with the question of specialization for those who have definitely elected to pursue the study of art as a calling, as with the question of general courses which shall bring all the undergraduates under the influence of art as an intimate and vital element in the life of the community and of the nation. It would seem difficult to combat the theory that the lack of appreciation which is responsible for the ugliness of our present-day communities is a problem which cannot be dissociated from education as a ruling factor in national life. Art cannot be detached from life and left to struggle as an exotic in a cold land. The whole problem would seem to be one of relating art to all things into which the creative impulse may enter.

ONE of the most vital and interesting educational problems which should engage the attention of governing boards, presidents, and faculties is the question of education in art in our colleges and universities. This is all the more true because presidents, faculties, and boards do not in general realize the immense practical importance of such education. I am not here discussing the training of the technical artist. Yet I say "practical" advisedly. For, while, in this age of specialization we spare no labor or expense in equipment or in teaching force in order that we may properly instruct the limited number of students in any one subject such as law, engineering, biology, or German, we have so far almost entirely failed to grasp the significance of art as a factor in a liberal education for all these classes of students.

The tendency in these latter years is to have the student begin his specializing earlier and yet earlier in his scholastic career. There are not wanting teachers of English, mathematics, or French who apparently believe that the student should in infancy begin on his speciality and devote to it his entire time during his school life—excepting only a few stray hours that are grudgingly allotted to certain subjects closely related to this speciality. Yet comparatively few out of the great mass of college students will in aftertime devote themselves to either law, Latin, or literature. Therefore, for the great body of students no one of these specialties will prove practical in the sense of being actually used in the business of life. For the multitude of graduates, in fact, any one of these subjects will in a few short years become a memory, an "iridescent dream."

But no matter what a man's vocation may be there is one avocation which is today making an ever-increasing appeal to intelligent citizens. This is the pursuit of the beautiful. For it is not merely the architect, painter, sculptor, art critic, or art historian who is interested in beauty. Here and there throughout our land the professional man, the business man, or other laborer is becoming desirous that the architecture of his house, the furnishings of his home, the pictures upon its walls, the appearance of his street or his city, the lines of his automobile, shall be in the highest degree attractive.

This is a most hopeful sign of the times. Most of these people will, however, confess they are rather blindly groping for something that they fear they may not be able to recognize when they see it. Many of them realize that they have not been educated in matters artistic, and some at heart have a vague feeling that art is something very mysterious which only the select few of the initiated can ever really hope to comprehend.

It would seem then that the time is ripe for a great movement for an education in art that shall reach the great masses of people. It is indeed a happy omen when such a potent and influential organization as is the American Institute of Architects gives serious consideration to art education in our colleges and universities.

The freshman comes to college with pretty definite notions of the importance of such studies as history, political science, mathematics, and sociology. Of all such things he has heard throughout his preparatory career. As for art, he either shies at the bare mention of the word with something of the same skittishness which he shows toward the discussion of personal religion, or he regards art as something of no practical value, a sort of sentimental mush that is fed to the denizens of feminine finishing schools. In the dialect of Missouri, he needs "to be shown" that education in art is indeed meant for strong men.

The average American college teacher agrees, in the main, with the above mentioned freshmen's views on art and needs much the same enlightenment.

In the wide range of created beings the most peculiar animal is the college student. There is one animal more peculiar than the college student, and that is the college professor.

So the campaign of those interested in art education in our colleges and universities must first be waged to demonstrate to college communities the value of education in art.

I am here not concerned with the specialist who expects to devote himself to the theory or the practice of art, but with the laymen whose chief interest lies in other fields.

How then shall we reach the average student, attract

him and then instruct him so that he may become a citizen capable of judging, appreciating, and enjoying art? This is the great problem in the teaching of art to candidates for the A. B. degree.

*The Committee on Education of the American Institute of Architects proposes to solve this problem by offering in all colleges and universities five general courses in the history of art. At present writing I do not have their program before me, but these general historical courses include: (1) Architecture, (2) Sculpture, (3) Painting. For these courses, I understand, no prerequisites in the study of art are to be required. The report recommends that they be taught by technical artists rather than by regular university teachers on the ground, as the chairman writes me that "the man who produces is more likely to be able to inspire."

The able Committee of the Institute has devoted much time and thought to their report. Members of the Institute have for three years conducted an experiment in Harvard University the results of which seem to the Committee to warrant the recommendations they have made. I have read the evidence on this Harvard experiment (Mr. Walker's course in Harvard), but I find myself unable to agree with the conclusions reached by the Committee. Therefore, with all due modesty, I shall try to state some of my reasons for this disagreement.

Probably there are no institutions of higher education in the country today that are prepared with the teaching force or the material equipment necessary for the five general courses recommended by the Committee. Nor is it probable that within the next ten years more than two or three of these institutions can be prepared to offer these courses. From institutions whose material resources are already overtaxed it is idle to expect any unusual expenditure in the field of art. With the funds provided it might be easy in Boston, New York, or Chicago to secure the technical teaching force, but how about the great number of colleges in locations far removed from the centers where artists congregate?

For me, in the teaching of undergraduates, one course in the general history of art, or even one general course on the history of architecture, or sculpture, or painting, is anathema. In each of these courses the subject is too large, too broad, too varied to be handled successfully. There is not enough time in which to properly discuss the works belonging to the various schools and periods. For, of course, I am assuming that the teaching of art to the average undergraduate is of little worth unless it deals mainly with original objects of art or with the best available reproductions of such objects. In my own experience I find that better results are reached in courses which cover great art periods, *e. g.*, The History of Greek Sculpture, Italian Renaissance Painting, The History of French Painting. Such courses are broad enough to admit of those comparisons which are essential for true education, but they are not so extensive as to preclude adequate consideration of the entire field.

As a matter of fact we do not prescribe a course covering all the literatures of the world for the student who knows no literature. Nor do we give a general course covering all the languages of the world for the freshman who knows no language—even his mother tongue. Yet the field of art is wider than that of literature, more extensive even than that of language.

It seems to me that the place for a course in the general history of art (as for courses in comparative literature and comparative philology) is in the graduate school after the student has studied many fields of art and understands these fields quite completely. For such a student, if you have a big man to do the lecturing, one who is large enough intellectually, spiritually, and artistically, such a course would be of immense value.

Some of my colleagues in other institutions agree with my view. Others find such a general course as is suggested by the Committee a good course for beginners. I have no quarrel with them for their opinion.

The point that I am making is this. It is useless to dogmatize on non-essentials. The essential thing, to my mind, is that the average college student who is not making a specialty of art shall be taught to understand, appreciate, and love art. It is quite useless to insist that he can be taught all this by being placed in any one course. After reading the evidence on the Walker course at Harvard, I am quite convinced that whatever success Mr. Walker had with those students was due not to the general course he was teaching but to the personality of the man. Success or failure in reaching the desired end in teaching art will always depend far more on the man who does the teaching than on the label which is attached to his course.

I realize that I am now entering on dangerous ground, for there are some educators who do not agree with the liberal position taken by the chairman of the Committee. He declares that it is quite possible for those who have had no technical training to be successful teachers of the history and criticism of art. He emphasizes this statement by referring to that Nestor of American college art teachers, Charles Eliot Norton. But there are those who hold that it is "unpedagogic" for anyone to attempt the teaching of art who is not himself a technician. If the man without techincal training were to attempt to teach drawing or painting, that would indeed be "unpedagogic."

How many of the teachers of literature in this country could have written Hamlet? How many of them, in fact, have written anything notable or even tolerable in the way of literature? Yet many, very many, of them have been inspiring teachers. I question whether Shakespeare would have been a successful teacher of literature. I have no question that it would have been a deplorable misuse of genius to have occupied his time with such teaching.

The power to create and the power to expound and elucidate may indeed sometimes be found in the same individual, but the possession of the one power does not necessarily imply the presence of the other.

The first-class artist is usually too much absorbed with his own creative work to be willing to spend his time and energy in teaching college freshmen. Nor does his artistic training necessarily fit him to understand their needs or to inspire their souls. I doubt indeed if many successful artists would be willing to turn aside from their chosen work to undertake such teaching.

There are, to be sure, unsuccessful artists galore who because they have smudged with charcoal and puddled with pigment feel that they can speak *ex cathedra* on all

*See Report of the Committee, Journal for August, 1916, page 357.

matters pertaining to art. Unfortunately, some who can neither draw nor paint, nor teach, nor lecture have reached positions in colleges and universities greatly detrimental to the cause of the teaching of art. For, owing in part to the unfortunate fact that many art schools admit practically all who apply without regard to the education or lack of education of the applicant, and in part to the very nature of the extreme "artistic temperament," many who have received technical training are not in the least qualified to become teachers of college students.

On the other hand, there are estimable gentlemen holding professorships in some of our colleges who, after spending the best years of their lives in the earnest and often successful pursuit of other branches of learning deem it a pleasant recreation for their declining years to talk to their students about the glorious themes of art.

It is difficult to say from which of these two, the half-baked artist or the academic fossil, the worst teaching is to be expected. Unfortunate is the college that is afflicted with either; most unfortunate is the college that is afflicted with both.

A recent writer in the Journal of the Institute has well said that you cannot teach a man to become an artist. You can teach him to draw, to paint, to handle the T-square and the chisel, but the power to become an artist must be innate; it cannot be acquired from without.

But there are many artists who have never drawn a line, mixed a color, traced a design, or used the chisel and mallet. Their eyes are keen to discern, their spirits quick to appreciate, their tongues are ready to expound. Some such at least are even now inspiring college students with love for the splendid creations of art.

In standing for the first time before the Victory of Samothrace, the Venus of Melos, or the Parthenon Fates, who is interested to know the kind of working tools used by the sculptors? When gazing upward at the Sistine ceiling are we really curious to discover how Michelangelo mixed the mortar and applied the pigments? In the Sainte Chapelle in Paris we do not need to know all the geometry which was mastered by the architect before he could design that vaulted ceiling. But we are filled with wonder and admiration at the beauty of that structure which seems to float upon the golden sea of the afternoon sunlight. It was Whistler who said that in the perfect work of art all traces of the technical methods by which it was achieved have been effaced. Knowledge of technique is not essential in order that we may receive the message of the great art of the world. The one essential is that we shall hold communion with the souls of the masters by oft-repeated and intelligent contemplation of the works of their hands. The realm of art is as long as the life of our race. It is as wide as the gamut of human emotions. To this wonderful region there are many avenues of approach. I would not wish even to seem to block any of these. I would not like by any arbitrary touchstone to designate the guide who shall lead the pilgrim into this fair land.

I condemn the report of the Committee for its seeming narrowness, dogmatism, and illiberality. I contend for freedom, tolerance, and liberty.

I would have the Institute use the great strength of its influence in supporting the cause of sound training in art in every college in the land. I would have the Institute insist that when technical training is offered to college students, it shall not be an emasculated "academic" substitute but that it shall be real training in the fundamentals of art. I would have the Institute urge upon the constituted authorities that gifted teachers give inspiring courses in art to the great body of undergraduates. I would not have the Institute attempt to rigidly prescribe the exact courses or dogmatically designate any special class of individuals as the teachers.

In short, I would have the Institute deal with principles and not with panaceas.—JOHN PICKARD, *President, College Art Association of America, University of Missouri, October 27, 1916.*

I have read the report of the Institute's Committee on Education with great interest, and am very glad to comment on it, in accordance with your request.

The first recommendation of the Committee will, I am sure, be heartily endorsed by all college teachers of the fine arts. On this point there can be no difference of opinion. There certainly should be a general introductory course for undergraduates, in which the history of art should be traced in its broad outlines, with emphasis on the great monuments, the great artists, and general principles. (Incidentally, I ought perhaps to state that we have such a course at Harvard. The two half-courses mentioned in the fifth paragraph of the report, which are said to have "concentrated on Greek sculpture or Renaissance painting," cover the whole history of art and are planned for undergraduates who have no knowledge of the fine arts.) That the college "should lend all its influence to make this a course which every man should take before he leaves college" is also desirable, but under the present arrangement of courses in most American colleges, which, with certain limitations, leaves the undergraduate free to choose what he will study, I do not see how such a recommendation can be carried out. The attitude of some college faculties toward the study of the arts does not encourage the hope that many colleges will "lend their influence" officially to encourage such study in preference to other subjects. A better hope can be founded on the fact that the teaching of the arts in American colleges shows steady improvement and is already winning recognition in places where such teaching was little esteemed, if not actually looked down upon, not many years ago; and a more practical ideal for teachers of the arts is, I think, to make their teaching of such a quality that both their colleagues and the students in their charge may come to recognize the importance of the subject and feel the need of some knowledge of it.

The suggestion of general courses in architecture, sculpture, painting, and the decorative arts, to follow the introductory course, is decidedly original and interesting. It has been the theory of the Harvard division of the arts that after the undergraduate has obtained a general introduction to the subject, he had better be allowed to choose from a number of courses some field which especially interests him and be encouraged to deepen his knowledge of that particular field, that intensive study of a limited portion of a great subject develops power of observation and knowledge of fundamental principles more rapidly and more surely than a large number of general courses

But the Committee's plan suggests interesting possibilities and deserves careful consideration.

In regard to a prescription of studio work in connection with the five general courses, my own belief is that such a prescription might tend to repel rather than to attract students. There can be no doubt that a certain amount of practice, however elementary, greatly increases the student's appreciation of architecture, sculpture, painting, and the decorative arts, but the average undergraduate is likely to be mistrustful of his manual dexterity and to shun courses in which he thinks such dexterity necessary. The solution of this difficulty which has been attempted at Harvard is the arrangement of what are practically two sets of courses: one series in drawing and painting and the theory of design, in which theory and practice are emphasized and the historical aspects of these subjects are only briefly considered, if at all; and a second series, in which the history and principles of the arts in different ages or in particular countries form the backbone of the course and little or no practice is called for. No hard and fast rule is laid down. The conduct of any particular course is left largely to the instructor. In some of the courses in drawing and painting, lectures of a historical character are given; in some of the essentially historical courses, students are required or encouraged to submit copies of works of art as a part of their work. Such a system gives plentiful opportunity to the student who wishes to develop technical skill, and at the same time does not repel the man who, rightly or wrongly, thinks that he has no talent for the practice of the arts. This advantage, I am afraid, would be lost under the Committee's plan.

The suggestion that the general courses be given by men of professional experience is attractive in many ways, but I think that here again there is a practical difficulty, in that great artists seldom have the time or the inclination to teach, or at least, to teach the *history* of art; and after all, it is the history of art, a knowledge of what has been done in the past and of the relation of works of art to the civilizations from which they sprang, together with some knowledge of esthetic principles, that is desirable for the great majority of undergraduates. Occasional lectures by prominent artists and professional men are undoubtedly of great value to students of the arts and are usually arranged—often with considerably difficulty—in many institutions. But the routine of a long series of lectures is usually irksome to the artist, and his mind is rarely of the analytical and critical type which is desirable in the college instructor. I am under the impression too, that in several American colleges, the teaching of the arts has suffered from being largely in the hands of professional painters. Members of other departments have been inclined to regard the work as not on a par with other instruction on account of the emphasis laid on technical details, without systematic or logical explanation. This is, perhaps, one reason why instruction in the arts has tended, in recent years, to emphasize in courses for undergraduates the historical and analytical, rather than the professional point of view, and to be in the hands of men of the Berenson, rather than the Sargent type. Some technical knowledge is undoubtedly desirable for the college teacher, and is essential for the instructor in the technical school. But the careers of some of the best-known teachers of the arts seem to prove that professional experience is not necessary for successful teaching. It is an interesting fact that Professor Norton, who perhaps did more than any other man to introduce the study of art into the curriculum of American colleges, would not be eligible as a teacher of any of the general courses under the Committee's plan.

If I were to make a broad, general criticism of the Committee's scheme, I should say that it seems to me to be too much influenced by the technical point of view, that it makes too little provision for the man who does not look forward to a professional career, but wishes to gain some knowledge of the great monuments of the past and their significance. The great majority of college undergraduates are of this type, and it is for them that any scheme of instruction of undergraduates, as distinct from professional students in graduate or technical schools, must be planned.

These are some of the points that have suggested themselves to me after reading the report. If they seem to be mostly arguments from the opposition bench, perhaps they will prove helpful to further discussion.—GEORGE H. CHASE, *Harvard University, October, 1916.*

You courteously invite my comment on the report of your Committee on Education, published in the August number of this Journal. Before considering the proposals in detail, it is perhaps fair to remark that the plan is, for very practicable reasons, available only for universities with fully developed art departments. Universities and colleges which have an art staff of a single professor—and that is the usual case—must content themselves with a far more limited program. It is fair also to remark that the question of the architect is, in the policy of a real university, secondary to that of its art curriculum as a whole. The architect will be provided for specifically in a school of architecture. The undergraduate curriculum in art must be framed with regard to the whole body of students. To train the student who later means to be an architect is, from the university point of view, merely an incidental aim. Your Committee naturally asks, What can the curriculum do for the architect? The universities with equal propriety ask, What can architectural studies do for our curriculum?

At Princeton, out of twelve (half-year) undergraduate courses on art, we devote six to architecture. This expresses our conviction that architecture is specially available as the central subject for the study of the general history of art. But we do this in the interest of all our students; and, as a matter of fact, intending architects are probably at no time more than one-tenth of the attendants in our architectural courses. Our object is not vocational, but to produce the well-informed and well-rounded man in matters of taste. Just a few words on the Committee's report.

> "First, there should be a general course for undergraduates, and the college should lend all its influence to make this a course which every man should take before he leaves college."

This seems to me theoretically sound. Practically, however, it is extremely difficult to find the teacher who can make such a course both solid and attractive. The

teaching too often ends in encyclopedic dullness or in mere frothiness. At Princeton we substitute for such a comprehensive course one general course in classical art, and one on classical architecture. These are the basis of our art curriculum. I presume we have been led to this course largely by the nature of our teaching *personnel*, but it seems to me a reasonable solution for universities which do not command lecturers of the exceptional qualities required to make a general course go. I believe that every effort should be made to develop lecturers who can handle comprehensive subjects with that lucidity and judgment which are common only in France.

> "In addition to this general course, which might be considered introductory and elementary, there should be a general course in architecture, one in sculpture, one in painting, and one in the decorative arts—five courses in all."

It would be easier to discuss this proposal if it were perfectly clear what the Committee means by a course. Supposing half-year courses of three exercises a week to be meant, the proposal seems to me to multiply general courses unduly. It would mean prolonging discursive studies for at least a year before studying any subject intimately. I should not want in my own courses students who had lived so long on so thin a diet.

In my opinion it would be better not to follow the elementary course with, for example, another general course on sculpture, but to proceed directly to such central themes as Greek, Gothic, Renaissance, or modern sculpture.

The proposed course on the decorative arts seems to me a luxury from the point of view of the average university curriculum. A discerning student will get a reasonable insight into decorative styles incidentally, in the courses on architecture, sculpture and painting.

> "Second, these five courses should be supplemented by studio work and, if all this work were done under one roof, it would be an advantage. Architecture, painting, sculpture and the decorative arts taught simply and broadly by the lectures and driven home by some practice—elementary and amateur—but still practice."

The advisability of studio work seems to me to depend mostly on the personality of the teacher and the time available for such exercises. In the subject of architecture I feel sure that some drawing is essential. There is no better way of visualizing and memorizing structural facts. I think, too, that students planning to be architects may profitably begin both graphics and design pretty early. Whether studio work is really necessary or even advisable for college students of painting and sculpture I much doubt. I do not see any royal road to the appreciation of fine design through one's self designing badly. Besides what would the "studio work" in the four general courses proposed by the Committee really amount to? Evidently to a few very elementary exercises. Undoubtedly some teachers find such exercises valuable; others do not. A university should be broad enough to let the teacher's personality decide such matters. Art may be taught as objective design (decoration), as esthetics (philosophy of taste) or as a splendid branch of history. All these approaches are good. Some perhaps imply studio work, others do not, so there you are.

> "Third, the courses should be given, the first by an artist, painter, sculptor or architect of wide knowledge and experience; the second by an architect; the third by a sculptor; the fourth by a painter; the fifth by a decorative painter."

This seems to me a most contestable counsel both on the practical and theoretical side. It expresses as against the catholicity which should be the mainspring of university polity, the vocationalism of the professional school. A university should be very glad to find a painter to give its course on painting; it should also be glad to welcome to the same work an art historian, or a connoisseur, a critic, or an esthetician. An ideal art faculty would contain members of all these types and would court such diversity of gifts.

> "Following these general courses would come as many of the courses now given in special fields of art as the college felt able to offer. The backbone of the department of fine arts would be these five general courses."

I wonder if any general course has ever been a "backbone" in the eyes of the department giving it? The Committee imputes to the painter, sculptor, architect, and decorator who are to conduct the general courses a degree of teaching force highly exceptional among professional teachers. My own feeling, based on some observation, is that while only a genius can make much of a subject like Art or Painting, any reasonable talent can cope with such jobs as Italian Painting, or Northern Painting, and any industrious person can do well enough, with highly specialized work, like the study of single artists or of limited schools. But I do not think that either a course on Painting in general or, say, on Catalon Primitives in particular, could ever be the "backbone" of any curriculum. One wouldn't be stiff enough, and the other, at best, would be an isolated vertebra. A course on Gothic architecture would seem to be a backbone course as a general course on architecture could never be.

I trust that my partial dissent from the program of the Committee may not obscure my sense of the value of the report. I agree with most of the proposals so long as they are not made exclusive formulas. Teaching is a very personal matter. Doubtless your Committee men would themselves teach with conviction and success along the lines of their own report. But they ought to leave a place for men of the type of the mysterious "Beresford" (Berenson?) whom they cite as an expert. In all this matter the fullest exchange of views between University teachers, who are of right theorists, and practising artists is desirable. The report of the Committee, rigidly logical and professional as it is in tone, will help the universities to measure and perhaps to amend that delicate empiricism by which successful art departments actually do live, move, and have their being.—FRANK JEWETT MATHER, JR., *Marquard Professor of Art and Archæology, Princeton University, October, 1916.*

SERINVILLE (Meurthe et Moselle).—After a drawing

The Exhibition of Regional Architecture in the Invaded Provinces of France

HELD AT PARIS DURING JANUARY AND FEBRUARY, 1917

DURING the last two months there has been held in Paris an exhibition, composed of drawings, water colors, paintings and photographs, and all related to the ancient dwellings and farmhouses of those provinces of France which have been invaded, and where many historic buildings have been destroyed. In the published catalogue of the exhibition one finds a preface by M. Léandre Vaillat, editor of *Le Temps*. Nothing more fittingly and more sympathetically could have prepared one to enter into this land where the tender roots of so many generations have been wrenched from the soil, and where sorrow and desolation hang like a pall over the quivering debris. None can measure the extent or the influence of this violent uprooting. Architecture has nothing more precious to offer than the deep attachment which it inspires among the humans who move among its humblest creations, into which there has been breathed the spirit of their ancestral race. No more cruel mark is left in the wake of war than these wounds upon which the scars form so slowly, and disappear only after the centuries have spread the balm of obliteration. Do they ever disappear in whole? Probably not.

The following translation of M. Vaillat's preface has been made for the Journal by Mrs. Kimball, and we are grateful for the opportunity of so preserving, in a small way, the memory of that for much of which we shall look in vain when we wander again in those provinces of France where war has taken its ruthless toll.

Old Habitations and Dwellings of the Fields

From the French of M. Leandre Vaillat

Whom of us has it not at some time befallen to spend certain hours in a remote country station, awaiting the arrival of a train?

You consult your guidebook: the village is a kilometer or two away: there is no mention of cathedral or castle. Idle, helpless, you seek a bookshop to buy some newspapers: there are none. You study the placards: they promise you swift journeys, to lands where there are many mountains, many historic monuments, and never any wearisome stops in places forgotten of men, like this one. You end by examining the station itself; it is similar to those you have viewed from the car-door without feeling any desire for closer acquaintance. You weigh yourself: you have gained a kilo. Then, tired

out, you desperately decide to visit the village, whose bell-tower you see over there through a haze tremulous with heat and light.

A long avenue bordered with plane-trees leads to it; the trees are as new as the station itself; the shadows of their meager foliage do not meet upon the dusty soil, and you take special pains to dodge the sun. But gradually you pass from that torrid zone to a more hospitable one. At first there are some scattered farms of small interest, commonplace like the railway station; they are under its stupefying influence. The dwellings draw closer together, nestle against each other, though without crowding; the road becomes a street; and at once, instead of moving on tediously straight like a geometric line, it indulges in coquetries, turns now to left, now to right, the pointed caps of its roofs, knowing well where it means to go, but planning to go there without fatigue or ennui, appropriating all the coolness, but making detours to avoid the icy and turbulent wind that in winter whips about petticoats and frays out the lace of headdresses.

Everybody is in the fields; the village sleeps in the midst of its harvests; one would think it deserted. You have all the better chance to explore it. Here are no ornaments, no capitals, no statues, but well-balanced forms of building, happily logical, and gaining from that very security a certain welcoming effect. Wood does not masquerade as stone, stone does not simulate wood; the charm of these houses consists in the avowal—proudly agreed to, naively expressed—of a certain rude poverty. Their beauty lies in the modesty of their lines with regard to the surrounding landscape, in the dignity of a taste which reveals itself in the simple juxtaposition of a red and a green, of a basket of fruit and a jardinière of flowers, in such appeal to kindly souls as we recognize in the paintings of Chardin.

WALLON-CAPEL (Flanders).—After a drawing

You go on, forgetting the great journey; and you come suddenly upon a little square where the shadow of the bell-tower travels around all day, as on the face of a sun-dial; a fountain in the center fills it with cool murmurings, the large basin with worn edges receives the water dispensed by four branches of greenish bronze around a granite pillar, surmounted by a ball upholding a cross of finely wrought iron. The flocks are returning homeward, the street comes to life with human beings of tranquil gait, moving with a rhythm suggestive of barn-doors widely swung. The sun goes down; you have forgotten the hour, and when you recall it, it is to regret the dream which you were just formulating, of abiding here and thinking no more of the railway station. . . .

Before the war there were many villages with a charm like this, in the invaded provinces. And it is because we have often so missed the train, because we have often so lingered, in that happy and unappreciated time of peace, that we have wept to know them destroyed, and have dreaded to see them rebuilt without intelligence, conforming to a type chosen with no reference to space or individuality, alien to all personal concern, to all sentimental preferences. We do not wish the aspect of the new-built house to be *forlorn*, we would have it harmonize, like that former one, with the soil, the landscape, the region, even as the old peasant does with the coif that covers her head.

What is to be done, at the start? to seek patiently for pictures, for watercolors, drawings, engravings, photographs, which may give us back the image of that which is no more, or is hidden behind present barriers; to group them according to regions, and show them to the public by way of gently demonstrating to it the immensity of its loss, and suggesting future respect for these old city dwellings, these houses of the fields, which have sheltered under their roof-trees the undying soul of our ancient provinces.

I talked of my project with M. Defrasse, chief architect of the Bank of France. He described to me the work being carried on in the same direction by the society of architects

CHEMINON (Marne).—After a drawing

CHEMINON (Marne).—After a drawing

diplomés par le gouvernement; and when I proposed putting my ideas at their service, all our efforts to be in common, he promptly recognized in the spirit which animated me a kindred inspiration to that which was guiding their researches.

It took the war to show people in France that close by the side of Architecture with the capital A—whom the early sculptors depicted in the form of a woman nobly draped, a Vitruvius on her knees, a compass in her hand—there was architecture with a small *a*, whom I picture to myself more simply in the shape of a *bonne femme*, well versed in the receipts that her mother has handed down to her. In these latter years there have been founded many societies of "friends:" Friends of Versailles, Friends of Fontainebleau, Friends of the Louvre. Has any one ever suggested "Friends of Old Houses?" has any one been moved to bring together those whom a subtler sympathy inclines toward an art more rustic and closer to the life led, not merely by a few elect individuals, but by nearly all mankind? That dignity of the "historical monument," to which the church and the castle have been promoted—why not bestow it oftener on the dwellings of city or country? they often teach us as many things as are revealed to us by the cathedral or the palace.

I do not think that our epoch, so finely artistic, so eager to seek in the museums of Europe material for its admiration and also, alas! for its imitation, has granted to these elements of humble beauty the attention that they merited. At least, such attention has been given chiefly by certain incorrigible *regionalists*, or by certain privileged countries. I will instance, for example, and without attempting to mention all, the researches undertaken by the *Revue Alsacienne* of Strasbourg, and the *Revue Lorraine* of Nancy. Everyone knows the museum of Arles, founded by Mistral. It must be said that with little exception, the great public, influenced by books and by propaganda, had no eyes for the houses of simple style harmoniously adapted to each one, to the surrounding scenery, to the climate, to the ground; but lingered to contemplate the exceptional examples, sprung up in periods perfectly normal, and for that very reason less able to throw any light on our im-

PLACE DE L'EGLISE, RANCOURT (Meuse).—After a drawing

mediate necessities. I do not think that the most eminent masters of the School of Fine Arts have concerned themselves greatly with that domestic tradition which, though not permitting the lofty beauty of Roman monuments and classic art, has nevertheless so many hidden, discreet and fruitful virtues.

But let us speak no ill of the School of Fine Arts: there were former pupils and masters of that school, heads of its ateliers, old "*prix de Rome*," who came to me with outstretched hands, who listened with unforgettable cordiality to my suggestions and promised to realize with me the dream of an exposition of regional architecture. Through them that essentially national doctrine, which formerly passed for somewhat revolutionary, overcame orthodoxy; through them it became an official programme of instruction; and I hope that some not distant day will see, in the School of Fine Arts at last reopened, a special chair whose incumbent—easily chosen—shall teach young Frenchmen, not the form of the Pantheon but that of a farmhouse in the Vosges, a house in Alsace, or an inn of Picardy.

Here is the cheering prospect: at the beginning of this year, M. Paul Léon, who directs with so much wisdom and clearness the service of historic monuments, had the happy thought of entrusting to one of their architects, M. André Ventre, a research among the dwellings of the invaded provinces; and asked him to illustrate by drawings those characteristics which I have long endeavored to specify in my studies of the "regionalism" of French architecture. M. André Ventre, in spite of all sorts of material difficulties such as every one may count upon who travels in the army zone, succeeded in collecting a quantity of documents which will explain to the public the exhibition whose catalogue is introduced by this preface.

Geometry betrays faults of construction; rarely can the latter bear its tests; only perfection can triumph over them. On the other hand, perspective has the merit of placing a work in its *milieu*, its atmosphere; it becomes then an architectural mass, with light and shade, that is to say, values in relation to a fixed lighting. M. André Ventre excels in this; his drawings, boldly treated in the ensemble, can be comprehended from afar; he reproduces the essential features, heavily accented after the manner of wood engravings; and when he is quite sure of being understood by every one, he

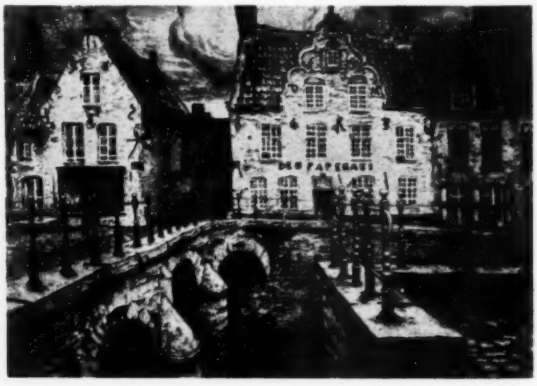
permits himself to draw for his own amusement and that of the unhurried spectator some detail that interests him, a mantel decoration, a cornice; he takes a pleasure in that so visible that one shares it. And thus, by dint of sympathy, he succeeds in conveying the flavor of a work whose merit lies in solicitude, in a slowly acquired art, in proportions, in a respectful attitude toward people and toward nature.

From Flanders he went down to Artois, then to Picardy; from the region of Noyon he passed to that of Soissons, which in the materials and the character of its constructions is allied to the Valois and the Ile-de-France; before reaching Lorraine and Alsace he crossed Champagne. We recognize the long, low house of the Boulonnais district, its wide windows with little panes and green shutters in the white stucco, hiding under its great thatched roof bordered with red rafter-ends; then its cousins of Artois and Picardy, analogous but not wholly similar; the dwelling of Valois and of the Ile-de-France, with notched gables, all in coarse limestone with shells; that of rocky Champagne, its chalky tufa framed in brown oak; that of Lorraine, quiet of lines like the horizons of the Meuse, opening wide the arch of its barn-door under the gently sloping roof covered with curved tile; finally the wooden-walled house of Alsace, with pointed gables, and galleries where they dry tobacco plants or maize.

I know of nothing comparable to these researches except those conducted by Baron Taylor, toward 1850. Among the artists who worked at illustrating his "Travels in old France," there were two brothers who did for Picardy, their native country, what I should wish done for each province of France. Aimé and Louis Duthoit, born at Amiens in the beginning of the nineteenth century, received their first lessons from their father, a master sculptor established at Lille during the Revolution. I have examined a little note-book of escutcheons, wherein as children they amused themselves by sketching the precise and nervous ornament of plumed crest and blazoned shield. To their origin and training they owed that respectful fondness of the early artisan for atelier traditions; their fidelity and conscientiousness were identified with all the enterprises of those who at that period had a hand in the renaissance of mediaeval art; Viollet-le-Duc called them the last "image-painters" of the Middle Ages.

For a half-century, nearly from 1820 to 1870, with a patience worthy of those masters whom they set themselves to resemble, they drew from morning to evening, without ceasing, aside from their work as artists of images, everything in their province of Picardy that caught their fond attention: bell-towers springing into the light fleecy sky, great steep roofs pierced by dormers in the form of a seated dog, stocky chimneys, pulleys lifting sheaves into the granaries, old worn timber-work stained and surfaced by contact with human hands, trees twisted and solitary in a desolate country, bosquets delicate as plumes waving over the gracious crowd on the promenade, windmills with great wings half opaque and half trans-

A Farmhouse (Artois).—After the painting by Jules Breton



Dixmude (Flanders).—After the etching by Victor Gilsoul

parent, turning above the dunes, heaps of mingled brick and stone, market gardens with innumerable canals peopled by the gardeners' boats, coats of arms carved on the keystone of an arch or the tympanum of a door, farmyards, covered wells shaped like pyramids, stalls familiarly planted between the buttresses of a church, booths at markets and saint's day festivals, belfries, cemeteries encircling humble country churches, sculpture of the past; and dominating all Picardy as a great bell drowns the voice of little bells, the cathedral of Amiens, the cathedral wherein they lived in the company of saints and heroes as in the midst of friends—where they could have found their way about blindfolded, and which they could have reconstructed, stone by stone, if the Germans had destroyed it.

Everything is drawn with a light, *spirituel* touch, without useless insistence: the black-lead stands out brilliantly from the grain of the yellowed paper. These men who lived as ascetics of art, whose learning was prodigious, found a way to avoid crushing under the weight of their knowledge those who viewed their work; in their task of explanation they are humorous, but discreetly so; they are moved, but in a way which is not lacking in irony; and always, in characterising the work of different periods—for example, a mediaeval angel or a *bambino* of the eighteenth century—they playfully indicate their preferences and gently suggest, without pedantry, what should be done and what should not be done.

And their counsels are simple: instead of straying into distant lands whose speech and customs are strange to us, let us look about in the country where we were born, have lived, and hope to rest; far from ridiculing the talk of old inhabitants as though it were but dotage, let us endeavor to read the mysterious meaning of those familiar sayings whose banality is but on the surface. Since they talk thus, they must have their reasons; what are they? Since their dwellings are built after this fashion, there must be a motive; what is it? And this applies not merely to rural houses, to city residences, but also to cathedrals, to palaces, to statues. It is easy to jest at Viollet-le-Duc; they may say, smiling, "gothic 1830;" but what did Viollet-le-Duc desire if not a return to national tradition—that is, to an architecture suited to

GIRECOURT (Vosges).—After a drawing

the soil, to the climate, to the scenery, to the inhabitants—and finally the abandonment of an ultramontane architecture, conceived in Greece and Rome by Greek and Roman masters, consequently regional in Greece and Rome but alien to our country. By outlining in their sketch-books the "*beau Dieu*" of Amiens with the silhouette of a Picardy farmhouse, the Duthoit brothers seemed to imply that a master builder of France should study those models that he has under his eye, before reaching after the foreign beauty of the Apollo Belvedere or the Baths of Caracalla. If they made themselves through life the faithful and self-sacrificing servants of Gothic architecture, doubtless it was that the latter's true name was not that but really—*opus francigenum*, French work. By accepting their lessons, or rather their counsels, subtly whispered, we should have discovered in the Middle Ages not only an unrivalled museum, but an art truly our own, the principles and the means of compassing a simple, harmonious and logical embellishment of our life.

If we have not found in each invaded province a similar monument raised with a like devotion, at least we have sought and succeeded in disclosing everywhere a regional tradition, announcing itself with gratifying earnestness. The spirit in which we must consider the work exhibited here is not the same as that which inspired our review of the yearly salons, before the war. It would be well to bring hither —I will not say more indulgence, for the exhibitors have no need of it—but more temperament and more reverence. Here are no longer impressionists, *pointillistes*, cubists, futurists, "*pompiers*," not even "*pompiers*" who take fire; here are only good Frenchmen, concerned with the houses of the country of France. These aquarelles, these paintings, drawings, engravings, plans, perspectives, let us regard them not as works of art evolved "in an ivory tower," but as witnesses and reminders of days unhappily ended.

Let us fancy ourselves in the situation of exiles driven from their dwellings, who suddenly return . . . What do they find? Ruins, sections of wall, a fragment of woodwork. They still preserve among their effects, hurriedly brought away at the time of invasion, some postcard or photograph which will aid them in reconstructing the ruined house. Will they amuse themselves by playing dilettante and criticizing that picture? No. They will interrogate it as they would interrogate an old native, without prying into its deficiencies. Misfortune has dignified it; it symbolizes an ancestral tradition, verified by experience; the image has become an *icon*.

RANCOURT (Meuse).—After a Drawing

Town-Planning and Housing

GEORGE B. FORD, Associate Editor

Plan for the Village of Erwin, Tennessee

The development at Erwin, Tennessee, is one of the signs of a wide awakening to the great natural advantages of the Blue Ridge Mountain Section. The Holston Corporation has owned for some time about nine hundred acres at Erwin, and an immediate need for increased housing facilities has arisen with the establishment there of a pottery plant, and with the prospect of other industries to follow. The Corporation has therefore adopted a policy of general development along broad lines with a view to the ultimate good not only of its own tract but of the town of Erwin as well. The latter has at present a population of about three thousand. A large proportion of the local industry has been in connection with the repair shops of the Carolina, Clinchfield & Ohio Railroad, located at Erwin, strategically placed at almost exactly the middle point of the line's extent.

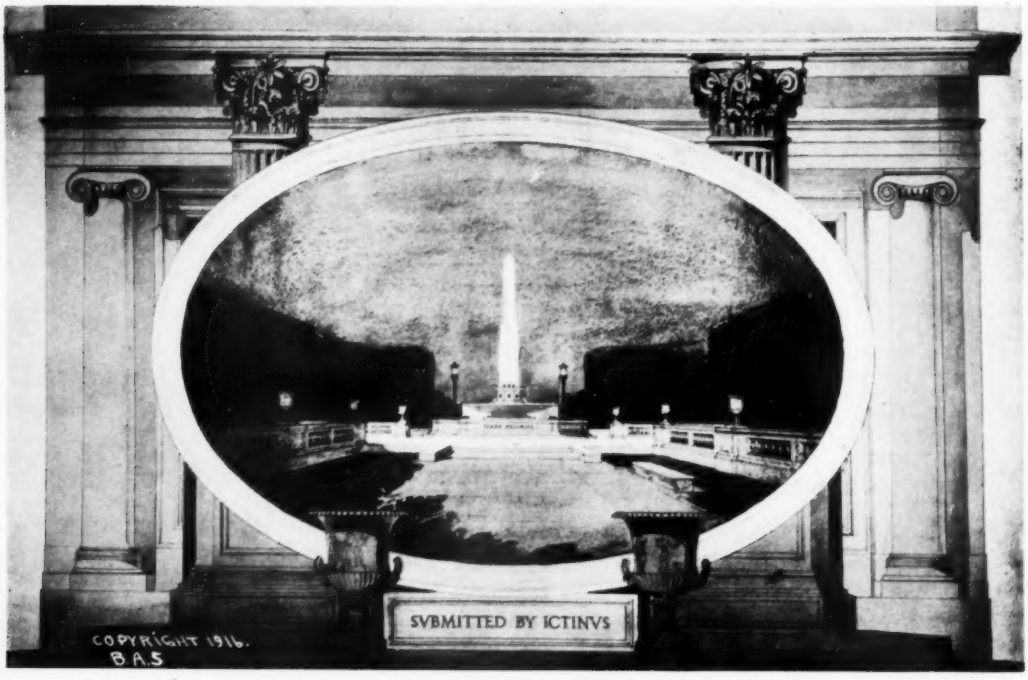
As usual in such cases, the time element was pressing so that it was necessary to contract for the first fifty dwellings within eight weeks after starting the study of the problem. Fortunately it has been possible so to place these first groups of houses as not to prejudice a proper study of the larger problem of the general plan. Work is now being pushed along these lines, under the direction of Mr. Grosvenor Atterbury.

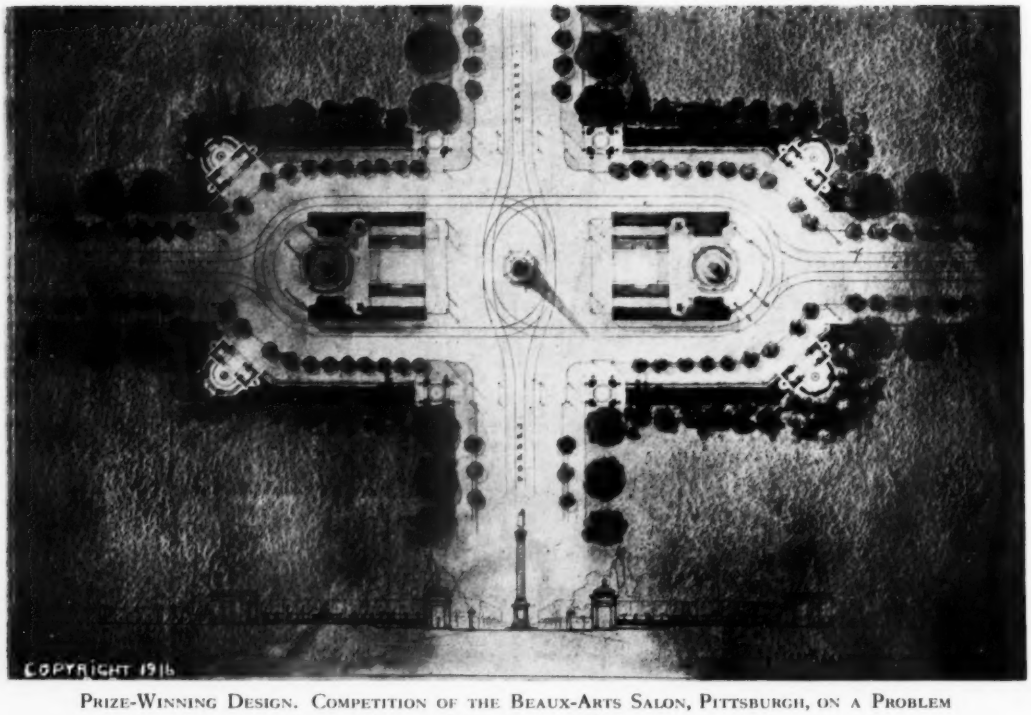
The first groups of houses comprise four-room houses of bungalow type, five-room and six-room houses, both of which have bedrooms and baths on the second floor and, also, several houses of slightly larger type. Building costs at Erwin are surprisingly low, these houses being contracted for at prices varying only slightly from ten cents per cubic foot.

Study for Treatment of Intersection of Two Streets

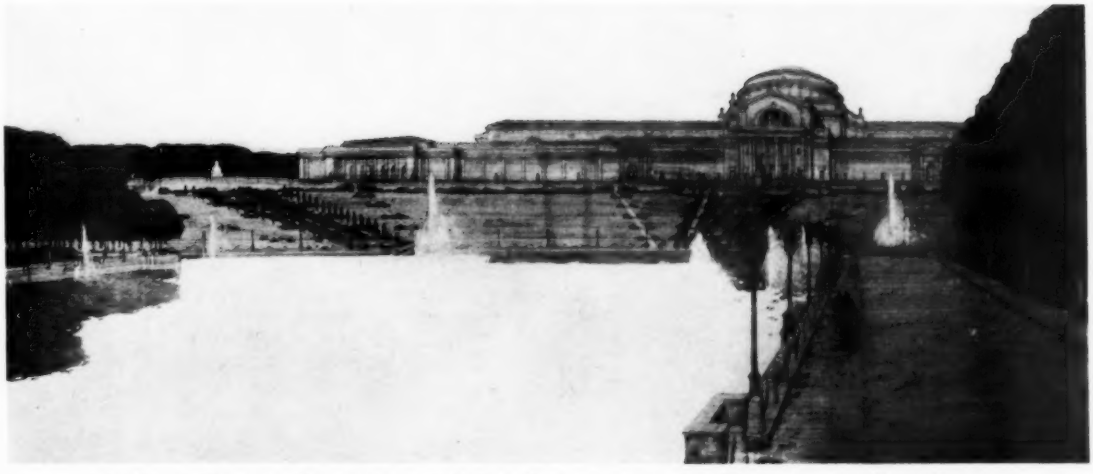
The treatment of the intersection of two streets in a residential district was the subject of a competition held by the Beaux Arts Salon, of Pittsburgh, for which awards were made early in December. Benno Janssen, Frederick Law Olmsted and F. F. Nicola were the judges. The first prize of $250 was awarded to John P. Morgan, of Swissvale, Pa., for a solution which, in the opinion of the jury, met the practical requirements of traffic at the intersection, and had the additional merit of being one of the two most beautiful designs submitted. First honorable mention was awarded to W. Pope Barney and Rutan & Russell for a solution notable for its beauty of design and presentation.

Five of the designs, including that receiving first honorable mention, show a disposition of car tracks which the jurors regard as fundamentally wrong from the standpoint of traffic regulation. Four of the designs present a type of plan differing from the ordinary cross-roads, mainly in the clipping off of the four corners to give more space for traffic, in the monumental treatment of the four corners, and in the occurrence of a central object of more or less monumental character around which traffic is to be directed.





PRIZE-WINNING DESIGN. COMPETITION OF THE BEAUX-ARTS SALON, PITTSBURGH, ON A PROBLEM OF STREET INTERSECTION. See page 115



St. Louis—Proposed Development in Forest Park, with the Art Museum as the Focal Point

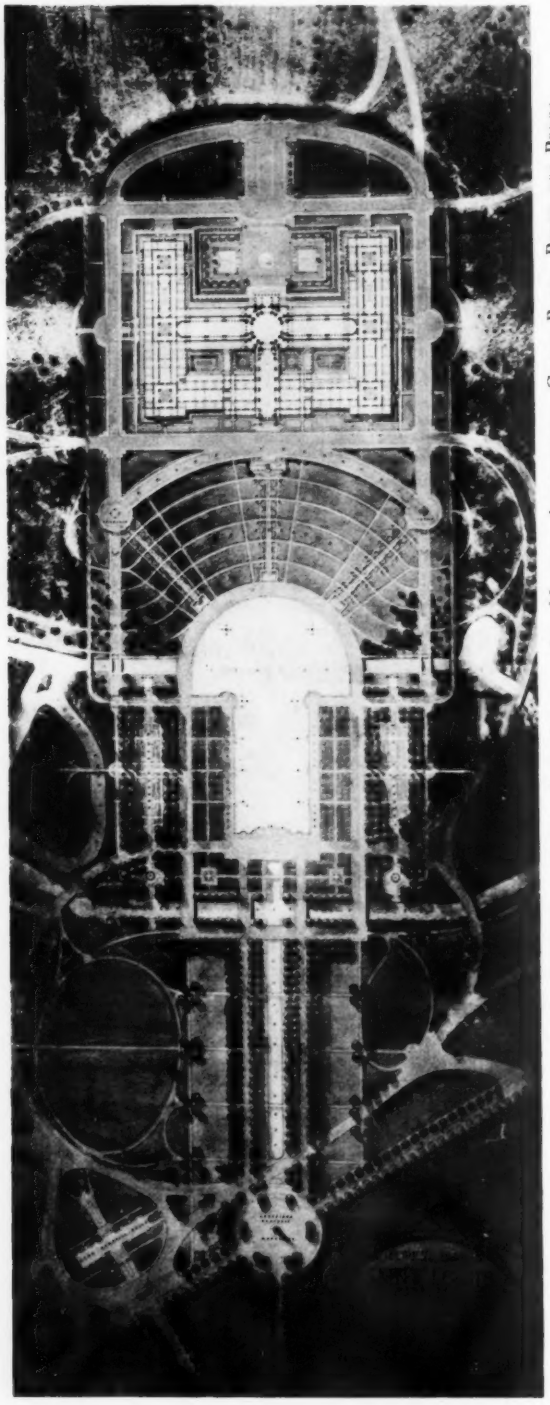
Development of Forest Park, St. Louis

What is said to be the most ambitious scheme for the improvement of a section of a municipal park on formal lines ever attempted in America is that for the development of the grand basin and adjacent grounds in Forest Park, St. Louis.

At the World's Fair in 1904, the development of this site on similar lines, but on a much larger scale, revealed the great possibilities of the location for a permanent formal approach and setting for buildings and as a focus of landscape and architectural interest for a great park. To Nelson Cunliff, Commission of Parks and Recreation of St. Louis, is due the credit for the conception of the idea that has resulted in the design prepared by Cass Gilbert and drawn by Jules Guerin.

The proposal embraces Art Hill, on which the Museum is situated, an amphitheater, a formal basin, and an extensive system of driveways, promenades, paths and cascades, all constituting together an undertaking that will require at least twenty years to complete. The plan permits, however, of full use of all existing features of the

St. Louis—Proposed Development of Forest Park from Art Hill to Lindell Drive. View Looking Northeast



ST. LOUIS—PLAN OF PROPOSED DEVELOPMENT IN FOREST PARK SHOWING ART MUSEUM, AMPITHEATRE, GRAND BASIN, RIVER DES PERES, GRAND CANAL, AND LOUISIANA PURCHASE MONUMENT

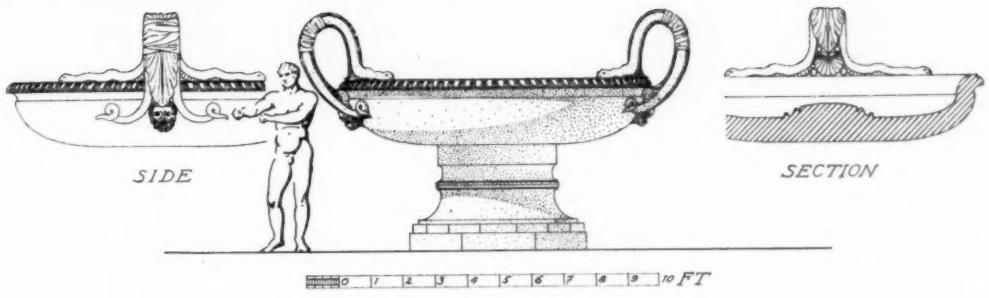
site now, and of such other added features as are carried out from time to time as financial conditions permit.

The Art Museum is to be the focal point of the plan, and the whole design is laid out with this end in view. The plans call for an enlargement of the Museum building to a size which will provide a total area equal to eight times the existing area. Bordering the front line of the Museum, at present, is a broad driveway and promenade. The new plan calls for a realignment of this driveway and a lowering of the roadway in front of the Museum in order to give an unobstructed view of the building from the grand basin below. In carrying out the entire scheme, the main problem is one of planting and grading. Progress in the realization of the development will be gradual, owing to the slow natural development of landscape features, particularly the growth of young trees, 1,000 of which already have been set out in a design to conform to the plan.

The scheme in general has virtually been approved by the Board of Public Service. When the work is actually completed, St. Louis will have one of the most attractive recreational spaces possessed by any city in the world, as well as a magnificent formal setting for its Art Museum.

A Diagnosis of Milwaukee's City-Planning Needs, and a Report on River-Front Improvement

The Wisconsin Chapter of the American Institute of Architects and several civic organizations in Milwaukee coöperating, have received from Dr. Werner Hegemann, the city-planning expert, a report, prepared at their request, on Milwaukee's city-planning problems. The report includes a number of valuable diagrammatic illustrations and descriptive text on the historical features of Milwaukee's plan, pertaining mainly to the street and highway system and the problems of transtit and transportation. The great need of parks is accented, which, according to the report, is the most prominent feature of comprehensive city-planning engaging public attention today. Comparisons and suggestions are made on the city's housing problem, which it is stated includes in certain localities slum conditions than which few can be found that are worse, even in the larger cities. Perhaps the most interesting feature of the report, from the architect's standpoint, are the concluding paragraphs on the improvement of the Milwaukee River frontage which is fast becoming a factor of first importance in its effect on the architectural treatment of many of the imposing commercial buildings now being erected in the heart of the city's business district. It is hoped that the river will in time be transformed into a beautiful canal almost Venetian in character. The civic center, which it is hoped will be really expressive of the dignity and importance of the city, is briefly discussed, and support given to recommendations on this phase of the problem by Frederick Law Olmsted and John Nolen a number of years ago. The civic center, together with the parks, are those features of city-planning which so far have been most strongly emphasized in public discussions in Milwaukee.



A Vase from the Baths of Caracalla

The antique vase illustrated above now stands in the center of the west court of the National Museum at Naples. It is entirely of porphyry—a material which the Romans brought from Egypt. Porphyry is no longer quarried and can be had only in small fragments worth almost their own weight in gold. One handle of the vase is gone, and the bowl itself is pieced together in several places. The vase formed part of the celebrated Farnese collection which found its way from Rome to Naples at the time of the marriage of a Farnese to a Neapolitan Bourbon prince. The collection today constitutes one of the chief interests in the museum at Naples.

The following notes may be of interest:

Two members of the Farnese family, Paul III and Alessandro Farnese II, men of wide culture and great wealth, were the first to excavate and exploit the Baths of Caracalla. The principal treasures found by them were the so-called Farnese Bull, Hercules and Flora (all at Naples), and the two gigantic tubs now standing as fountains in the piazza in front of the Farnese Palace in Rome. The celebrated Torso Belvedere, to which Michel Angelo ascribed his power of representing the human form, and over which, in his blind old age, he loved to pass his hands "that he might still enjoy through touch the greatness of its muscles," was also discovered in these Baths. And the last column (of Egyptian granite) was taken to Florence to support the statue of Justice in the piazza San Trinita. Although these and other treasures have been "scattered to the four winds," yet the ruins themselves are still among the most impressive of the whole Roman world: it was here that Shelley found an inspiring surrounding in which to write his "Prometheus Unbound."

The Baths themselves were begun in A.D. 212, and, as may be inferred from what has already been said, were of unparalleled magnificence. The bathing establishment proper measured 240 yards by 124 yards, and the entire enclosure 360 yards by 360 yards. In addition to the general baths there were 1,600 individual marble tubs, exercising-rooms, a race-course, conversation-rooms, lounging-rooms, libraries, lecture-halls, and a labyrinth of underground galleries for the service. The walls were covered with rare marbles from all parts of the world, and the floors were of porphyry, serpentine, and other precious materials laid in elegant designs. The water-spouts were of silver. The process of taking a bath required no little time and afforded the bather a variety of sensations. It consisted of, first, a hot-air bath at moderate temperature in the so-called Tepidarium, accompanied with an anointing and a gentle massage; second, a hot-water bath in the Caldarium; third, a cold plunge in the Frigidarium or Piscina, and, lastly, a rub-down and shampoo with a second anointment. The common could enjoy all this grandeur and luxury for a few small copper coins.—Gorham Phillips Stevens, *American Academy in Rome.*

Town-Planning Propaganda in India

Lectures by MR. H. V. LANCHESTER, F. R. I. B. A.

A very complete and interesting discussion of a wide range of town-planning and housing topics was given by Mr. H. V. Lanchester, F.R.I.B.A., in a series of twelve lectures delivered in the Engineering College at Madras, India, early in this year. The services of Mr. Lanchester were temporarily secured by the Government of Madras to inaugurate schemes of town-planning in the presidency. In comparing Indian with European cities, Mr. Lanchester noted the difficulties attending the work of the town-planner in the East because of the toleration extended there toward dilapidation of all kinds. He made a strong plea, however, for a reverential and sympathetic handling of the characteristic features of local cities and towns, and pointed out that in the beginning Hindu cities were planned with great care, according to sound common-sense principles buried in a great deal of mysticism. He urged that no encouragement be given to those who would break up the Indian social system with its traditional divisions and prescriptive occupations and substitute therefor the conditions of the modern industrial system. Mr. Lanchester said that Madras, in particular, had impressed him from the very first, not as a fine city, but as a city that possessed the most exceptional possibilities, and that he hoped some day to see a city there, no longer indefinite and vague, but one with all the characteristics of impressive dignity such as one sees among the European capitals, while still retaining the full beauty of its natural adjuncts, and an airy spaciousness that some of these lack.

Beaux-Arts Institute of Design

Official Notification of Awards—Judgments, January 23, 1917

Class "B," Second Analytique

Jury of Award.–M. S. Wyath, L. Warren, P. Goodwin, L. G. White, L. S. Weeks, W. A. Boring, J. A. Gurd, A. Ware.

Program.–A Colonnade. *Drawings submitted, 112.*

Awards.–First Mention Placed, D. P. Emley and P. A. Tischler, Columbia University; J. O. Vegezzi, Atelier Corbett, New York City.

First Mentions, D. A. Fletcher, Columbia University; N. Rotholz, Atelier Corbett, New York City; W. T. Conboye, George Washington University; H. W. Anderson, Atelier Rebori, Chicago.

Class "B," Second Projet

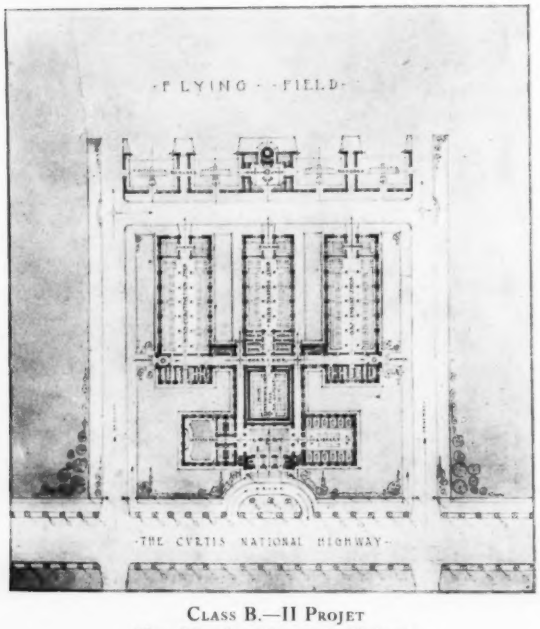
Jury of Award.–F. A. Godley, H. W. Corbett, Prof. Burnham, F. C. Hirons, C. L. Lawrance, E. I. Williams, F. H. Bosworth, Jr., P. A. Cusachs, H. Hornbostel, J. Clark, W. Emerson.

Program.–An Aëronautic School.

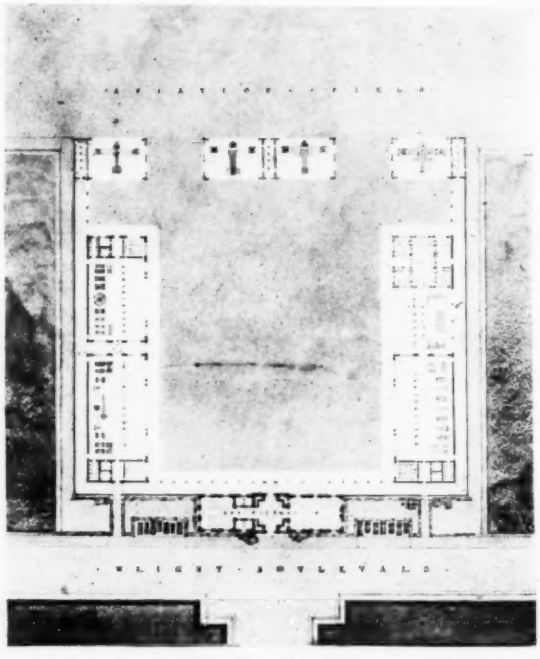
Drawings Submitted, 101.

Awards.–First Mention Placed, D. Holstein, Columbia University; J. Siegel, F. P. Wiedersum and A. B. Lincoln, Atelier Hirons, New York City.

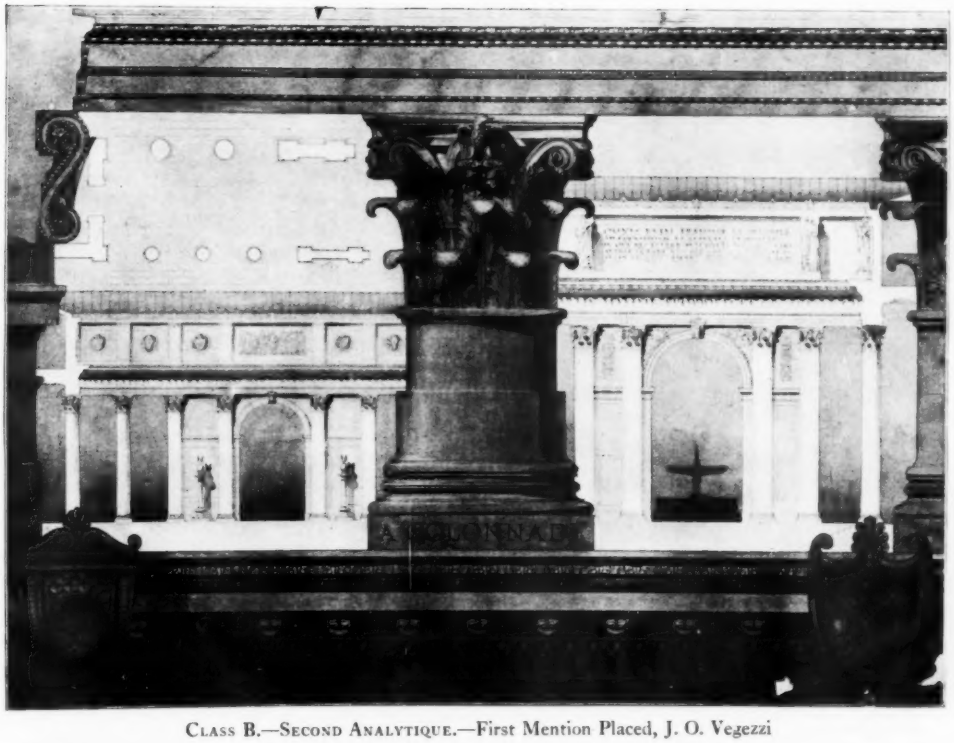
First Mentions, D. B. C. Morse, Columbia University; E. T. Truthan, T. H. Farnsworth, C. F. Schmidt and S. P. Thompson, Cornell University; P. Meng, Atelier Hirons, New York City; O. J. Horstmann, Atelier Baur, San Francisco Architectural Club.



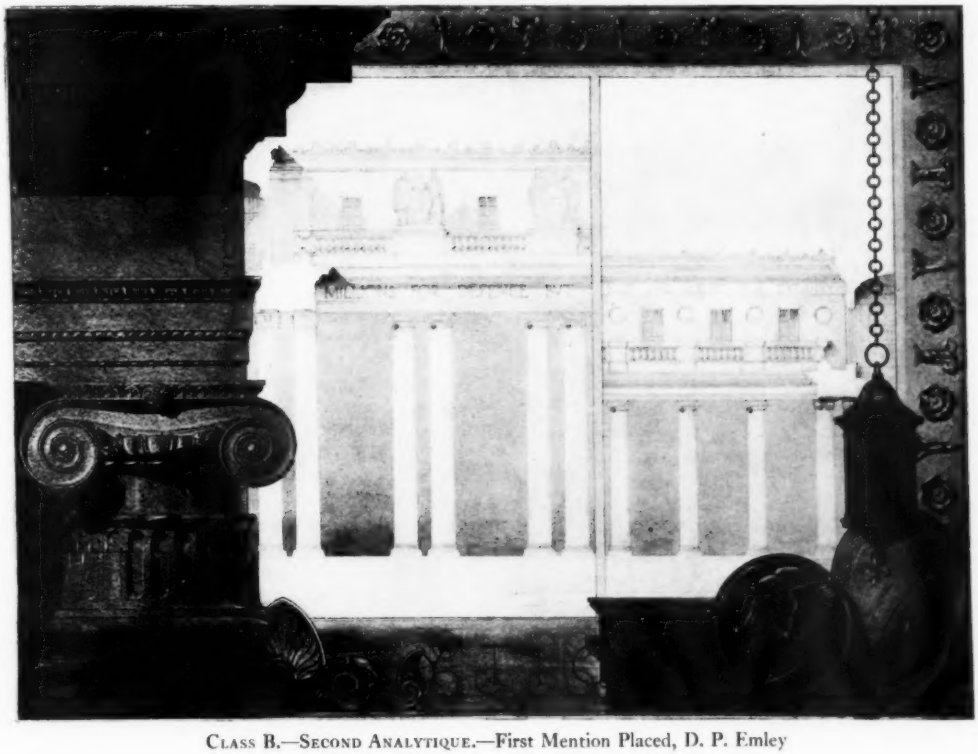
CLASS B.—II PROJET
First Mention Placed, D. Holstein



CLASS B.—II PROJET
First Mention Placed, J. Siegel



CLASS B.—SECOND ANALYTIQUE.—First Mention Placed, J. O. Vegezzi



CLASS B.—SECOND ANALYTIQUE.—First Mention Placed, D. P. Emley

Book Reviews

Pen Drawings of Old New Orleans.

By Frank G. Churchill. Published by the Author, at the Hibernia Bank Building, New Orleans, La. $1 net.

In this small and well printed volume Mr. Churchill has assembled fifteen of the drawings of old New Orleans. In a brief foreword he explains that the little book is by no means intended to be a complete record, but rather a reminder of the charm of the vanishing quarter in which there was once such an abundance of delightful architecture, exquisite craftsmanship, and fascinating courtyards and gardens. Heaven be praised that Mr. Churchill has taken up the task of perpetuating the memory! He feels the atmosphere of this quarter in every line which he puts upon the paper, and the drawings which he has selected for this present purpose are full of that ripe quality which only the years can give. Some of the buildings pictured in this book have already disappeared, and the destruction of others is only a question of time. A few things have been saved by the untiring energy of members of the profession in New Orleans. What a pity it is that no man of means has yet seen the possibilities which lie dormant in this slowly decaying quarter! We hope that Mr. Churchill will lose no time in adding to the record which he has already given us, and that soon we may have other drawings from his pen.—B.

At the End of Orleans Street, New Orleans
(From "Pen Drawings of Old New Orleans")

George Edmund Street.

Unpublished Notes and Reprinted Papers; with an Essay by Georgianna Goddard King. Publications of the Hispanic Society of America. G. P. Putnam's Sons, New York City. 1916. $2.25.

Reading the memoir of George Edmund Street takes one back to the England that will never be again. One writes the phrase with mingled feelings, for behind the creeping industrialism of the nineteenth century there stalked Victorian placidity and insipidity. Keats, slipping ashore at the mouth of the Thames to write the Last Sonnet ere England faded from his view, might well have been the premonition that such wines as his were to cease flowing from English vineyards for many a day.

But the England of Street's day was still a happy hunting-ground for the architect, and there was always the larger supplementary preserve across the Channel. The narrative of Street's life in England, and of his rambles and sketching tours, is full of the poetry of that England that once was—the England of hedge-rows and roses and May mornings in Devonshire, of abbey and church, cottage and castle, all scattered about in bewildering profusion. The pre-Raphaelite movement came within the scope of Street's life, and its sponsors were his friends, yet one is not sure that either the event or the men were greatly to influence his career. But the memoir gives us a delightful glimpse of a life so full, so rich, so strong, that there comes quite a disappointment when we turn to the pages of the reprinted notes.

Here there seem to be no echoes of that thrilling life. The narration of his tours seem chiefly occupied with dates—with the passion for classifying and indexing, at which Street was so remarkably clever, since he probably knew his Gothic as well as one has ever known it. This is all valuable, and would be exceedingly interesting on a journey, yet it leaves one with a longing for a larger reflection of the man who has been so interestingly brought before us in the memoir, for rarely has a more graceful tribute been paid to an artist than this. Not for anything should one miss the reading of those pages.—B.

Port Sunlight.

By T. Raffles Davidson, Hon. R. I. B. A. London, B. T. Batsford; New York, Charles Scribner's Sons. 1916. $1 net.

In spite of all that has been written of this now world-famous village, Mr. Davidson has approached the subject in a manner which invites a careful reading by those who really wish to know not so much how Port Sunlight looks, or how it has succeeded from an architectural or esthetic standpoint, but how well it has worked out in the larger manner which formed the basis of the project as it unfolded in the vision of its founders. The illustrations are excellent and give ample evidence of Mr. Davidson's facility of selection. The text is interesting and written under the influence of a warm appreciation of what Port Sunlight was meant to accomplish and of a faith that it has succeeded in a very large measure.—B.

BOOK REVIEWS

The Practical Book of Architecture.

By C. Matlack Price. Philadelphia, 1916. J. B. Lippincott Co.. $6 net.

It is certain that a review of this book by a well-informed layman would give a point of view that is not wholly apparent to the professional reader. The object of the author in writing this book is, I take it, to reach a great part of that intelligent American public, which although it is keenly interested and often-times extremely well versed in music, literature, science, and other forms of art, has forever remained the veriest tyro in all questions pertaining to architecture, a public that the architect has been for years trying to reach and interest in architectural matters. So far as the writer has intuitively been able to interest and awaken that semi-dormant desire of the average intelligent American to know and understand more about the buildings and monuments that he may see in his travels at home and abroad, just so far will he reap the reward that will follow a broad understanding of this work by a large circle of readers.

In accomplishing this he would derive as a by-product the grateful appreciation of the architects of the country for placing before this public, in comparatively simple form, so much information that would help to educate the public to a higher appreciation of, and a more intelligent participation in, those architectural duties, both public and personal, that it may be called upon to perform.

To the architect it would seem that the author has placed before his readers in a readable and easily comprehended manner, the elements of the many architectural styles that have come down to us from the past. They are further elucidated by an illustrated dictionary of architectural features and motifs that will be of much help to the lay reader.

Of special interest are the photographs, showing the derivation and evolution of our present American architecture, which, with the written description accompanying them, makes a most comprehensive and illuminating summing-up of our architectural progress.

The chapters devoted to the relations of architect and clients should be of great assistance to the public and the profession, if this book can be placed before a large number of readers. ALBERT E. SKEEL.

The Social Survey.

By Carol Aronovici, Ph.D. The Harper Press, Philadelphia. 1916. 256 pp. $1.25.

"The Social Survey" is based throughout upon the recognition of the fact that fundamentally a very considerable share of our community problems is due to bad city-planning, and it is from this angle that the book deals with the technique and content of the social survey.

Assuming that the fundamental functions in human society are the protection of life, the promotion of efficiency of labor, and adequate use of leisure time, the book outlines in minute detail the necessary processes in the conduct of a survey which would stand as an efficiency test of the relation that exists between the city plans and the life, labor, and leisure of the people.

The chapter on housing deserves special mention because it approaches the subject from the angle of constructive reform, dealing with the land question, shifts of industries and population, taxation, city-planning, and the many other factors that have come to be recognized as the causes of bad housing. The discussion of the field of leisure as related to the needs of the people presents a new approach to this subject. Recreation is considered only as a small although integral part of the problem of utilizing recreation as a creative social force. The task of bringing before the reader the modern ideas and tendencies on a given subject without in any way forecasting the results that should be expected when the survey is completed, has been done with skill.

The book is written in Dr. Aronovici's direct and rather unusual style which is well known to the readers of the Journal. In spite of its technical nature, the reader's interest is held through the way in which the structural functions of the community have been related to scientific principles and practical experience.

An extensive bibliography and list of the important surveys completed within the decade in this country and abroad constitute the index.—BERNARD J. NEWMAN, *Director of the School of Social Service of Philadelphia.*

Parks, Their Design, Equipment and Use.

By George Burnap, Landscape Architect of Buildings and Grounds, Washington, D. C. Philadelphia, J. B. Lippincott Co. 1916. $6 net.

If Mr. Burnap had said no more than the following, it would have justified the publication of this book: "Due to the unexpectedness with which the demand for civic planning has come upon America, a temporary lack of specially trained men has occurred, with the result that candidates from all the allied professions have aspired to present themselves as qualified for the remodeling of a city." Mr. Burnap does not exempt the architect, by any means, in this over-reaching for extra-professional opportunities, but points out the real complexity of the problem.

The real purpose of the work, however, is to deal with every aspect of parks, beginning, in the case of new ones, with the inception of the movement and tracing the whole development through its every stage and in wise consideration of all the influences which are exerted both upon the development and by it. "A park is the city's child," says Mr. Burnap, "needing to be nourished, trained and educated exactly like a human being; and in far greater degree than many a child, may be depended upon to show thanks and gratitude for whatever attention may be lavished upon it. It is civic suicide to forego the raising of parks, however much trouble they may be in their infancy and during the growing age. A park successfully brought to the full of its powers becomes a city's pride and joy; it establishes a precedent of beauty; many gardens follow and property values increase. A park properly brought up is a town or city asset, never an extravagance; a help and support against misfortune; a rejuvenation and pleasures on the approach of old age." One could scarcely state the case more clearly.

The book is copiously and well illustrated with subjects from all over the world and designed to impress the reader with the manifold methods which have been adopted for the treatment of parks and with every factor related to their use and their influence.—B.

How to Finance City-Planning in America

By WALTER D. MOODY

Money is basic in city-planning. Without Money no tangible results can be had. This applies in its first significance to city-planning in its inception. Money is the root of city-planning endeavor. Because this has not been realized, American cities on all sides attempting city-planning work are groping in the dark.

Money is not only the root—it is the branches, the leaves, the blossoms, the entire tree from which to pluck the fruit of city-planning aspirations. Consideration of city-planning, however, from the basic standpoint of Money requires an all-important analysis of city-planning in its promotional sense.

The term "promotion" as applied to city-planning is all too little understood in America. Here nothing is accomplished by imperial decree. It has been popular in the minds of many that city-planning was inherent in the professions of architecture and engineering—largely the former—and there the subject rested. Perhaps a better expression than "rested" could not be found. Securely at rest in the theoretical arms of the city-planning Morpheus, endeavor generally has either gone permanently to sleep, or is slumbering fitfully between attacks of hideous nightmare and deferred hopes. The greatest issue confronting American municipalities today is city-planning. The hour is imperative if real progress is to be made, that all citizens, professional and law, be brought to realize all of the elements bound up in this great science. Let not the shades of Pericles, Cæsar, Napoleon and Haussmann befog the issue.

The thing confronting us in this day and in America is, how to get things done under the cumbersome, unruly, unwieldy thing known as American municipal rule. Here procedure is a slow grinding and oft a coarse grinding process. Much of this, however, we discussed in our last article, "The New Profession, City-Planning," which followed the text, "How to Go About City-Planning;" hence we had better confine ourselves to the subject under discussion, "How To Finance a City Plan in America," lest we be accused, as was the clergyman of whom it was said, he divided his sermons into three parts—first he took a text, second he wandered away from it, and third he never returned to it. For success in America, city-planning must be divided into three main divisions. A "fourth dimension" we hope later in this article to indicate as potential in the future of accomplishment.

He who fails to proceed from this hypothesis will fail to get anywhere along the pathway of actual accomplishment. The shores of the great river "City-Planning" are lined with derelicts, wrecked on the shoals of mistaken theory. This seems so very stupid when havens of facts are so easy of navigation. Right at this bend in the river, however, is where the practical city-planning mind separates from the Utopian dreamer, he whose energies germinate largely in the boundless Sargossa Sea of theory.

The three divisions of city-planning properly designated are, first, Financial; second, Technical; third, Promotion. In the parlance of the day the wag would designate them as Contribution, Evolution and Execution. If our fourth dimension is to have a future place it could well be named Solution. Successful city-planning then demands first, Money; second, Expert Service; and third, Promotional Effort. Money must be had for plans. Plans must be had for promotional work. Promotional warfare must be waged before public opinion can be had, and without public opinion, public officials cannot be stirred to action. Each of these steps logically and in order takes its place in the successful city-planning program. The reverse of this procedure spells disaster.

Science, like Nature's laws, cannot be reversed and be made to work satisfactorily. It is just as possible to reverse a lawn-mower and attempt to cut grass by running it backward as it is to attempt city-planning by putting the cart before the horse. The laws of many states restrict municipal authorities to the appropriation of funds for expert service only. Generally, the statutes do not permit the appropriation of funds for promotional services. Many state statutes do not permit even the latter. City-planning is all promotional work in its inception.

Now let us reverse the order of delineation to enable us to grasp these facts from a different angle. The people are the first consideration in American city-planning. The ballot-box always goes before the builder—a fact never to be forgotten. Public consent can be had only after comprehensive and far-reaching educational propaganda. Basic in such propaganda, there must be comprehensive city plans affecting with equal benefit all elements in the municipality.

Before comprehensive plans can be had, experts must be engaged and then what do we encounter?—Money. Always and from every angle we come straight back to the basic factor in the whole city-planning scheme of things, Money. Money in the beginning must be secured by contribution from public-spirited citizens. Aside from these facts financial, the best origin for city-planning is in the hearts and minds of the citizens of the community and not in the city administration. Because this truth is not realized, city-planning failures are everywhere recorded. There are many reasons why this is true, but without too careful an analysis, we may cite Money again as the leading factor.

Municipal authorities, naturally, will not appropriate sufficient funds for the inception of a city-planning movement. Fear of public disfavor of a too-generous backing of an untried thing will hold them back if nothing else. Example of this is afforded in a city of half a million people where there originated in the city council the appointment of a plan commission. This commission was given an insufficient appropriation for the employment of experts in the production of an actual plan and nothing for its promotion. By the time an ill-considered plan was finished, the commission was discouraged. It had long since exhausted its funds, and had accomplished nothing because the support of the people was not secured as a necessary first step to success.

Another example is recalled in a city of close to a million inhabitants. Here the state laws would not permit of the appropriation of funds for any phase of city-planning work. The advocates of a city-planning movement there without funds and without prestige actually attempted to secure an enactment from the legislature to enable them to proceed. Failure was again recorded because it was not realized that before such legislation could be had public opinion would have to be aroused. This well-meaning but misguided organization soon went into oblivion because it worked backward. Infallible proof again of the altogether necessary and almost priceless commodity in city-planning—Favorable Public Opinion. Public opinion is required to secure legislation. Public opinion costs money, because to secure it requires education. Educational work in city-planning is most expensive propaganda.

After public opinion has been secured, city-planning has only just begun. The plan commission, if properly recognized, must continue as advisers to the city authorities. The maintenance of such work requires Money. There is where, perhaps, the original subscriber should step out and special financial provision should step in. It is not reasonable that public-spirited men should, in addition to providing the fund for originating and promoting the city plan, provide also maintenance funds for its progressive development.

Neither is it wise to anticipate sufficient funds from city appropriations for all plan-commission needs after the adoption of plan work by the municipality. Special financial means must eventually be provided. The idea of a city-planning department as a part of the city government has been advanced. Under such an arrangement, naturally, ample funds could be provided from city sources. There is no established precedent for this theory. Whether at any stage in a city-planning program a city-planning department would be a desirable feature of municipal government is debatable. It is obvious, though, that no new department can be established in any city without a public demand for it, and also that no public demand can be had until educational work has created it. To create the demand there must be plans, ably drawn and ably promoted. The only way those essentials can be had is by raising them from private sources and expending them in the manner already indicated.

After the plans have been created, after the educational propaganda has been waged, and after something tangible in the plan has been realized to prove the benefits of city-planning to the public, then the question of the establishment of a city-planning department for the further development of the plan may logically be considered. Then looms up the question as to whether or not it is desirable, feasible or possible for the people of a city officially to adopt plans which may require many years to complete.

Further, as each part of the basic plan is developed, circumstances within the city may lead to changes in detail in that basic plan, which will require further educational work. A street which may have been laid out for a boulevard may be found, when the time for its development comes, to require such treatment as will make it a business street for heavy traffic, as was the case in Twelfth Street in Chicago. Changes in the plan, naturally, require educational propaganda, and it is extremely doubtful whether a department of the city can facilitate that propaganda. Therefore, is not city-planning a thing apart, to be kept distinctive from city government? Should not the plan commission, the promotive agent, be left free to act as an intermediary between the people and the city authorities, promoting the plan with the public on the one hand and with the city officials on the other?

It may be too strong a statement to say that the deathknell of city-planning will be sounded when it is made a department of the city government. But in advancing the idea that it should be kept distinctive from the city government, it is recognized that no rule is a good rule that is not elastic in some degree. There may be isolated instances where, under a favorable condition of physical needs and of statutory enactments, the reverse of this reasoning would be true. It may be conceded that in a small city the general knowledge of the physical needs of the city is wide. The average citizen there knows what his city requires. In no large city, however, is it possible for the average citizen to grasp the larger needs of the city with respect to transportation, recreation and public health. It is only possible to make progress in city-planning in large cities by public education. Such work always can best be done by a voluntary organization of citizens such as a plan commission, and in the inception of the city-planning movement, it cannot be done with any other agency or in any other manner.

Every efficient architect and engineer realizes that highly skilled technical assistance will never subordinate itself to the rule of city politics or civil service, both necessary in the establishment and successful conduct of any city department. The efficient man, the man with initiative, the specialist on city-planning, always works best where he has a free hand.

Yes, city-planning as a branch of the city government might succeed if every city could produce a Charles H. Wacker to head it. Public-spirited Trojans like Wacker and city-planning specialists of experience and training are not logical products of municipal departments.

Great works for the benefit of mankind will continue, as always, to originate in and be fostered by the hearts and minds of public-spirited citizens. Welfare work for the people is inspirational and philanthropic. Always will this be the case in countries where there is no conferred power by imperial decree. Such power at least augurs something to the city-planning advantage of the people in absolute monarchies. Through the maze of underbrush incident to procedure in this country, and through all the discouraging and exasperating delays occasioned by cumbersome American procedure and conflicting powers, the plan commission—the agent of the people and of public spirit for the betterment of the city—must stand stalwart and progressive.

As indicative of the vital need of a plan commission in preference to a city-planning department, it may be cited that in almost every city where extraordinary improvements are contemplated it is usually necessary for the city officials to secure the coöperation of business associations and of other quasi-public volunteer organizations in order to accomplish their aims, such as bond issues and the like. These arguments and these reasons are not mere expressions of theoretical research. They are based upon absolute

contact with things municipal and things public. They are the result of years of cold experience, gleaned from actual contact with all the elements involved in city-planning in a great American city.

In questioning the wisdom of establishing city-planning departments as a part of the city government, there is no intent to imply that city-planning departments should be established outside of the city government. Rather, the purpose of this discussion is to show that city-planning in America can best originate in and be fostered by a quasi-public body acting as adviser to the city council and city departments. To deprecate the willingness of city authorities to appropriate as generously as legally can be done for city-planning work is not the intention in this discussion. In Chicago the plan commission has received, commensurate with the statutes, generous financial assistance from the city. The moneys thus had, however, and used only for expert technical service, total only one-quarter of the sums expended in originating the Plan of Chicago and its promotion, all subscribed from private sources.

The successful efforts of the Chicago Plan Commission reflect the financial backing of public-spirited citizens, plus such assistance as the city could render. The Commercial Club, one hundred of Chicago's leading business men, subscribed $85,000 for original work on the Plan of Chicago. This sum was for the actual creation of a technical plan and for the publication of the Club's plan report. Completed, the report was sent to the city authorities with the request for the appointment of a plan commission. Created by the city council, the Commission was authorized to study and promote the Plan of Chicago and for that purpose was given a city appropriation of only $5,000.

Prior to the appointment of the Commission, little had been done to educate the public. Its appointment caused the Commercial Club members to realize the need of the establishment of a Commission headquarters, organized to properly promote the plan, and it again went down into its pockets for a further contribution of $110,000. The Club also appropriated $10,000 per annum for five years for the maintenance of a technical plan staff; subsequently, the city appropriated from $5,000 to $10,000 per annum for three years. At the end of this period, when these sums were exhausted, the Commercial Club members immediately subscribed $50,000 for an additional two-years' work. The city appropriated for the same period approximately $52,000. The total appropriations of the city have amounted in the aggregate only to what the Plan Commission has expended for technical service. No funds whatever have been had at any time from the city for promotional or educational work.

The educational propaganda, resulting in far-reaching plan accomplishments, has included textbooks, pamphlets, illustrated lectures, moving pictures, and other necessary paraphernalia. The Chicago press has been the greatest single contributor to publicity and the most effective, but this invaluable support could not long have been sustained without basic merit in plan procedure or meritorious Commission performance.

Chicago's work on its plan will culminate in construction projects already under way costing $170,000,000. No Chicagoan who knows has any doubt of the wisdom of the expenditure of money for these results. This gigantic sum represents only the initital cost of parks, street-transportation, bridges, pleasure-piers and public-building projects. It does not include anything for the rehabilitation of private properties affected by these public improvements, which will certainly be an enormous item. Besides, other vast public improvement projects are certain eventually to be realized, but are in an incipient stage of procedure and are not included in these figures.

The Commercial Club members have subscribed $295,000 in promoting the Plan of Chicago. The city's entire appropriation in contrast to that sum is $69,000. It may be clearly seen, for it is here positively evident, that the Plan of Chicago, if aided only by such city appropriations as could be made under the limitations of the statutes, never would have been originated nor would it have been advanced an inch.

In logically closing the subject of this discussion, "How to Finance City-Planning in America," we may now give consideration to the fourth or final step, the perpetuity of city-planning effort. This we have named the Solution of the city-planning problem.

The answer is endowment. Why not? What more noteworthy humanitarian endeavor can there possibly be than making the cities more livable for the millions constantly swarming to them. Benevolent people have substantially endowed all manner of humanitarian projects. The world's work has been advanced by such endowment. City-planning is basic in all humanitarian movements. Without city-planning no endeavor toward the betterment of conditions in cities can or will reach the high notch of success which may be achieved with the assurance of a properly organized, well-defined plan for the growth of the city and its citizens. Safeguarding the health of our citizens means safeguarding the nation's greatest asset. Appalling is the last Government report which shows that 75 per cent of the recruits offering themselves for military service at the call of their country were rejected because of physical unfitness.

Endowments for great humanitarian purposes include the Russell Sage Foundation, the Rockefeller Fund, the Carnegie Fund, and a host of others. Why not city-planning endowment? The interest on an investment by the endower of three-quarters of a million dollars would yield a sufficient fund for the annual maintenance of city-plan work in the largest city. Proportionately, a lesser investment would be required in the graduation of cities, as to their size and requirements. The city of 25,000 to 50,000 people could maintain its work on the investment of perhaps $100,000. The needs of a city would naturally correspond with its size. Whatever the size, every city could produce a citizen of ample means for the local endowment.

City-planning endowments could be placed in the hands of a board of trustees, such board to direct the expenditure of the annual income and eventually invest the principal in such substantial manner as would perpetuate the donor's meritorious public enterprise. Albeit, when city-planning history is written, credit should be given to three sources —the public-spirited men who financially backed the plan in its inauguration, the architect or engineer who created it and the promoters who developed it. There is a vacant niche in the city-planning hall of fame for the endower who assures its ultimate realization.

The Forum

Mr. Pitkin Would Exonerate the "Strangely Unmoral" College President

To the Editor of the Journal:

In the December number of the Journal you included an item under "Shadows and Straws" relating to a case in which a certain college board of trustees questioned the bill presented by a firm of architects termed "x & y" for professional services in furnishing preliminary drawings for a college building.

You quote the letter of the president asking advice as to the general practice in such cases, and in your comment you proceed to heartily condemn the "strangely immoral" college president, and to uphold the firm of architects.

Your attitude is an unfamiliar one, in that it is unfair and ignores the fundamental fault in the matter. This fault is a very old one among architects, and professional men generally, and in my opinion is at the bottom of a great many of their difficulties with laymen. It is the fault of failing to state at the time negotiations are begun, and in a plain businesslike manner, the terms on which the work will be done.

Had "x & y" so stated their terms, there could have been no misunderstanding, and in failing to do so they voluntarily laid themselves open to be misunderstood.

It is only fair to the board of trustees concerned to recognize that, due to their inexperience in such matters, they might easily have interpreted the willingness of the architects to undertake the problem as meaning they would assume the risk in the transaction. And it is particularly easy to appreciate their point of view when we consider that other men of the same profession *did* make sketches gratuitously.

This apparent delicacy (or laxity) on the part of architects (and landscape architects) to state their business methods in terms of money is as ridiculous as it is childish. Every other reputable business covers its transaction by some form of agreement, and the buyer knows *before he buys just* what the article or service will cost, or on what basis the cost will be figured.

I believe the Institute recommends the use of a schedule of methods and charges by its members, and in cases such as the one you cite, the presentation of such a schedule to the prospective client, or the writing of a simply but clearly worded letter, would have fully protected both parties.

I cannot, therefore, agree with your comment upon the incident, and believe that upon reflection you will agree that the principal fault lay with the architects in neglecting to employ the simplest precaution of business usage.

Yours very truly,

WM. PITKIN, JR.

Rochester, N. Y., *January 30, 1917.*

[In attempting to characterize the action of the college president to whom Mr. Pitkin refers, we used the phrase "strangely unmoral." We did not accuse the gentleman of immorality, and thus the charge that we heartily condemned his conduct as "strangely immoral" is evidently due to a misreading of the exact phrase. We agree that a proper business statement should precede any arrangement for making plans, yet we still maintain that a man who finds that he has unwittingly created a legitimate indebtedness by asking an architect to make for him certain plans which he abandons in favor of others which were submitted gratuitously; who then announces his willingness to meet a just, if legal, obligation, and who then mulcts the second architect of fifty dollars in order to try and settle a fair claim of two hundred and fifty dollars, is strangely unmoral—for a college president, at least.—EDITOR.]

Institute Business

The Annuary and Proceedings

March, 1917.

The Proceedings of the Fiftieth Convention, held in Minneapolis, and the Annuary for 1917, are now in the hands of all Institute members, or soon will be.

In the Proceedings any subject in which you are interested can be readily found, either by turning the pages and glancing at the subheads or by referring to the index, which is in more complete form than heretofore.

The Convention at Minneapolis was a significant experience, both inspiring and refreshing, for those who took part. The enthusiasm and zeal which marked this meeting are representative of the spirit of the Chapters and members of the Institute throughout the country, and the future of the American Institute of Architects as a potent national organization never seemed brighter or more assured than at the beginning of this current year.

Obviously, it is impossible to put into the written record, which must of necessity be brief and without illustration, the atmosphere of this Fiftieth Convention, or to express adequately the hospitality and thoughtfulness of the Minnesota Chapter. But enough of these things do appear in the written record to make it of all-enduring interest to every architect, Institute member or otherwise, who is proud of his profession.

If you did not attend the Convention you should carefully read its Proceedings, which mark an epoch in our history. Therein is recorded the adoption of radical amendments to the Constitution and By-Laws; the plan

for dedicating the Octagon as a memorial to Charles Follen McKim; the call for better Government architecture; a constructive discussion of architectural education and its needs; the town-planning movement and its relation to the architect; and other subjects of vital interest to the Institute.

If it was your good fortune to attend the Convention this suggestion is indeed unnecessary.

The Annuary appears in about the same style as heretofore.

It should be borne in mind that in a membership of approximately fourteen hundred it is impossible to record accurately, even for twenty-four hours, the correct address of each and every one. Any changes necessary should be sent to the Executive Secretary at the Octagon, where the official records of the Institute are maintained.

In the Annuary, as a permanent place of reference, will be found the following official documents of the Institute:

Information Concerning Requirements for Institute Membership.

Constitution and By-Laws (as adopted at the Fiftieth Convention).

The Circular of Advice Relative to Architectural Competitions.

The Principles of Professional Practice and the Canons of Ethics.

The Schedule of Charges (as amended in form by authority of the Fiftieth Convention).

Copies of any of these documents in separate form may be obtained on request to the Executive Secretary, the Octagon, Washington, D. C.

New Members Admitted

This is a partial list of the members elected at the January meeting of the Board of Directors. Under the requirements of the Institute By-laws, no letter of notification is sent to a successful applicant until he has paid the preliminary fee. Hereafter the Journal will publish only the names of those who have paid this fee and have received the formal notification from the office of the Secretary.

A number of those elected at the January meeting have not sent the preliminary fee, though duly elected and qualified as Institute members in all other respects. It should not be presumed from the omission of the name of an applicant in this list, or from subsequent lists which may appear in the Journal, that such applicant failed of election.

Badgley, Sidney R.	Cleveland, Ohio
Baker, Cecil Franklin	Chicago, Ill.
Balch, Harold C.	Madison, Wis.
Beer, George Wm.	Cleveland, Ohio
Brown, Clifford C.	Dayton, Ohio
Cahill, Paul T.	Cleveland, Ohio
Cramer, Edwin C.	Milwaukee, Wis.
DeGolyer, Robert S.	Chicago, Ill.
Dercum, Hermann	Cleveland, Ohio.
Dippold, Albert P.	Chicago, Ill.
Ferrand, Gabriel	St. Louis
Fontaine, W. F.	Woonsocket, R. I.
Hallberg, Lawrence G.	Chicago, Ill.
Hill, Arthur E.	Providence, R. I.
Johnson, Reginald D.	Pasadena, Cal.
Judell, Walter W.	Milwaukee, Wis.
Kuehne, Hugo Franz	Austin, Texas
Law, James Richard	Madison, Wis.
Lippert, G. Henry	Madison, Wis.
Marx, Samuel A.	Chicago, Ill.
Matteson, Victor Andre	Chicago, Ill.
Overbeck, H. A.	Dallas, Texas
L. Baylor Pendleton	St. Louis
Pingrey, Roy E.	Chicago, Ill.
Saunders, Walter J.	Los Angeles, Cal.
Schaeffler, Joseph C.	New York, N. Y.
Schlacks, Henry J.	Chicago, Ill.
Shaw, Russell Hobart	Providence, R. I.
Simons, Albert	Charleston, S. C.
Snock, Curtis P.	New York, N. Y.
Swern, Perry W.	Chicago, Ill.
Teich, Fred C.	Houston, Texas
Timlin, Ray Irvin	St. Louis, Mo.
Todd, Robert C.	Charleston, S. C.
Van Ryn, Henry J.	Milwaukee, Wis.
Wahrenberger, James	San Antonio, Tex.
Walker, F. R.	Cleveland, Ohio
Walsh, Dennis Robert	Austin, Texas
Wedemeyer, William	St. Louis, Mo.
Weeks, Harry E.	Cleveland, Ohio
White, Thomas E.	Lansing, Mich.
Wolf, Alexander C.	Cleveland, Ohio

Obituary

Frank H. Martin

Elected to the Institute, 1912.
Died at Providence, R. I., February 2, 1917.

Mr. Martin was born in Rhode Island in 1863, and was a graduate of the Massachusetts Institute of Technology and the Lowell School of Design. He was in the employ, at one time, of John LaFarge and of Renwick, Aspinwall & Russell of New York. In Providence he was first in the office of Stone, Carpenter & Wilson, but in 1893 he formed, with Mr. George F. Hall, the firm of Martin & Hall, which had continued up to the time of his death.

At a special meeting of the Rhode Island Chapter, held on February 2, resolutions were adopted by which the chapter recorded its sense of loss, and "an appreciation of his worth, of the rare skill which beautified all it touched, of the solid professional attainments, and of the virtues which advanced his character as a single-hearted Christian gentleman."

Levi T. Scofield

Elected to the Institute as a Fellow in 1870.
Died at Cleveland, Ohio, February 25, 1917.

S. E. Desjardins

Elected to the Institute in 1885; to Fellowship in 1889.
Died at Cincinnati, Ohio, November 2, 1916.

Austin Allen

Elected to the Institute in 1916.
Died at Joplin, Mo., March 1, 1917.

News Notes

Mr. John Russell Pope Receives the Gold Medal of the Architectural League of New York

The Gold Medal given annually by the Architectural League of New York for the most worthy building erected in the United States during the year was awarded to John Russell Pope, of New York City, for the Temple of the Scottish Rite, on Sixteenth Street, Washington, D. C. This building was illustrated in the Journal for September, 1915.

Award of the Medal of Honor and the Apartment House Medals by the New York Chapter

The annual dinner of the New York Chapter was held on February 28, at the Ritz-Carlton Hotel, President Emerson presiding. Past-President Sturgis, of Boston, and Mr. George McAneny, former Borough President of Manhattan, were the guests of the Chapter. The winners of the Medal of Honor were announced as Messrs. Warren and Wetmore.

For the Apartment House Medals, the awards were as follows:

Six Stories or Under: The apartment house at the southeast corner of 188th Street and Creston Avenue, owned by the Pickens Building Company, Andrew J. Thomas, Architect, received the Medal. There were two mentions: The building at the southeast corner of Vyse Avenue and 181st Street, owned by Philip Weinstein & Son, Inc., Goldner and Goldberg, Architects, and the building at the northeast corner of Creston Avenue and 184th Street, owned by the Whitelow Building Company, Kreymbourg Architectural Company, Architects.

Over Six Stories: The Medal was given for the building at 72nd Street and Fifth Avenue, owned by the 907 Fifth Avenue Company, the architect being J. E. R. Carpenter. Mentions were given for the building at Broadway, 88th and 89th Streets, owned by Mr. Vincent Astor, Charles A. Platt, Architect, and for the building at Park Avenue, 55th and 56th Streets, owned by the 42d Park Avenue Company, Warren & Wetmore, Architects.

Mr. Sturgis then spoke upon the qualities of service and loyalty, and dwelt particularly upon the value of unity in the profession and of the necessity for submerging local issues and differences that the Institute as a whole might work out the best good for all. Mr. Sturgis spoke with great feeling and left no doubt of his own convictions on the subject of loyalty to the professon as the one means by which it may be elevated ever higher and higher. At the close of his remarks, he read a poem written by Mr. Guy Lowell, which received vigorous applause.

Mr. McAneny related some of his own intimate experiences when, as Borough President of Manhattan, he had occasion to work with the New York Chapter in trying to bring about many of the reforms which have since come to be accepted as part of the fundamental law of the city. It was one of the most gratifying illustrations of what architects have to offer and what an intelligent city is willing to accept in the way of unselfish effort, and the members of the new York Chapter may well point with pride to the story of their civic accomplishments. Certainly there were none present at the annual dinner who could in any way doubt the sincerity of the tribute paid to the Chapter by Mr. McAneny.

State Architects

The reasons set forth by the Executive Committee of the Boston Society of Architects for opposing the appointment of a State Architect are as follows:

First: Economy—In Cost.

In a tabulation of cost to the State of a State Architect's office should appear:

(*a*) Salaries.

(*b*) Overhead charges, including rental of space occupied by the Department. These charges include telephone, telegraph, mail, materials, etc.

In an architect's office the office force is gauged according to the work on hand. In a State or City Department the office force is held for future service when work is not on hand, with a consequent loss to the State. It is usual for State, City and Federal salaries to be higher than in private offices.

As a result, a department office is at a disadvantage when compared with a private office, excepting in the comparison of the department architect's salary, and one-half of the commissions (i. e., the profit paid to architects employed). Considering the fact that in one case there is continuous expenditure, and in the other intermittent expenditure, only when required, it is obvious that only constant erection of buildings of large cost would warrant the establishment of a State Architect's Department as an economy.

Second: Economy—In Efficiency.

It can be assumed that any office considered for the designing and carrying out of State buildings is capable, and that the State Department may be capable. The tendency for an active private office, depending for its reputation upon constant improvement in its work and on keeping in touch with all new developments, will not be to fall into the perfunctory repetitions of obsolete methods which are the dry rot of all bureaucratic bodies.

The State will, therefore, get better service from employing architects then by establishing a department.

Third: Automatic Power.

Under the bill, while the power of the State Architect is no more than that of an architect to his own office, the susceptibility of the State Architect's Department to interference and influence by political factions is much greater than in a private office, which fact does not tend toward efficient service for the State.

This has been manifest in all similar cases excepting where an exceptional man of unusua independence of

character has occasionally been obtained. The existence of these conditions is to be deplored, but cannot be more than ameliorated.

Fourth: Standardization.

There is an entirely mistaken impression of the value of so-called standardization of plans and consequent economy.

Standardization implies a constant and definite solution of a problem, and can be applied to small details for a certain period of time until improvement in those details has occurred. It cannot be applied to large organic factors of buildings as a whole or in part, as these factors are not constant and vary according to conditions. Any attempt to standardize such factors results in unconsidered work and poor service.

Fifth: Method of Competition.

The method of instituting competitions under the bill is an irresponsible one, prejudicial to the best interests of the work and tends to annul the method of competition instituted by the A. I. A. which is being more and more and more recognized by the public as being in its interest.

Sixth: Efficiency of Result.

The buildings of a State deserve to be of the best character. The best architects will not consent to occupy a position, no matter what the salary, which requires all their time, diverts their energies from other channels of expression, and which from its precarious tenure from political exigencies, may at any moment leave them to recommence their professional work. Therefore the State under the bill will not get the services of the best architects as State Architects, nor will it get the service of the best architects in competition, when competition is of the character specified in the bill.

The Proposed Law for the Registration of Architects in Indiana

The new law for Indiana, as proposed by the Committee in charge, seems to have been very comprehensively drawn and to be its own interpretation of many terms and meanings which have hitherto been more or less obscure in other laws. It is also noteworthy in that it contains the clauses defining the phrase "dishonest practice." It contains clauses 1, 2, and 5 of the tentative form suggested by Mr. Wight in the Journal for February (page 57) but does not provide any other penalty beyond the revocation of the license. Further comment may well be deferred pending the fate of the law in the Indiana Legislature.

An Appeal for the Disabled Soldiers of Belgium

Placed by chance in the path of aggression, mutilated in the defense of their country invaded in flagrant violation of an international treaty, these Belgian soldiers have the clearest claim to our aid and sympathy. To them it is mainly due that a far larger part of France, with its supreme monuments of Gothic art, its towns, villages and fields, is not now in utter ruin.

All of these sufferers can and will be taught some useful work, but their pensions will be very small, and with their so terribly impaired efficiency they can never be wholly self-supporting. To house these maimed men, a society has been formed of well-known Belgians, headed by Mons. Henri de Schoonen, Honorary Vice-Consul of Belgium, which proposes to build, after the war, homes and workshops, to be provided free of rent or sold on generous terms, and which will be, as far as possible, in the native villages of the invalided men.

This work urgently calls for our support and all gifts, however small, will be a real help and a proof of sympathy. To assist in the raising of funds, a series of pictorial postal cards and letter-paper with wood-cut designs, chiefly by Belgian artists, have been printed and will, it is hoped, be soon on sale throughout the United States. All contributions may be sent direct to Mons. Henri de Schoonen, 79 Mark Lane, London, E. C., or to the Editor of the Journal of the American Institute of Architects, The Octagon, Washington, D. C.—Henry Winslow, *American Member of the Committee of Relief for Belgian Artists, 1 Hill Road, N. W., London.*

Progress on Denver's Civic Center

Final plans for the completion of Denver's civic center and court of honor (discussed in the Journal, Vol. III, No. 11) are being drawn under the guidance of Edward H. Bennett, of Chicago. The plan of Frederick MacMonnies, the sculptor, who was called in 1908 to advise the city authorities on the civic-center problem, included a scheme that would make the center another Versailles, resplendent with electric illumination and flowing fountains, so attractive that it would prove the chief center for Denver's people in time of leisure. Mayor Speer, who has been for years an active supporter of city-planning in Denver, in a recent address, accented this idea, saying that it was his hope that the development would actually prove to be a city center, not a civic center as commonly understood.

Annual Meeting of the New York State Association

This meeting was held at Syracuse on the 16th of February. In the morning the delegates were shown the developments of city-planning in Syracuse, and a visit was paid to the Art and Architecture Departments of the University.

The convention approved the bills for the State Basic Building Code, condemned the location of institutions on the Croton Watershed, and the location of the new Central Power House of the Government at Washington.

Efforts are to be made by the Association toward encouraging the preservation of the historic and architecturally interesting buildings within the State, and toward stimulating interest in town-planning, emphasizing the fact that the real goal of this movement is practical, and that the esthetic welfare of any city is only possible when conditions of order, harmony, sanitation, easy transportation, and the general facilities necessary to the easy conduct of business, have been made right.

The officers elected for this year were as follows: President, Frank H. Quinby, Brooklyn; Vice-President,

Edwin S. Gordon, Rochester; Secretary-Treasurer, Leon Stern, Rochester. Directors, F. L. Ackerman, New York; Alexander Mackintosh, Brooklyn; A. L. Brockway, Syracuse; W. L. Wicks, Buffalo.

The convention ended with a dinner at which there were addresses by Messrs. R. D. Kohn, D. E. Waid, F. L. Ackerman, W. P. Bannister, Professor Martin of Cornell, and Professor Revels of Syracuse.

Centralization of Control of Housing—a Proposal to Fix Responsibility in Boards of Health

At the Fifth National Conference on Housing in America held at Providence, R. I., early in October, John Molitor, of Philadelphia, architect, and chief of the Bureau of Housing of the Pennsylvania Department of Health, delivered an address on "Housing as a Part of the Work of the Local Health Department." Mr. Molitor described housing as a new thought which is being woven into our twentieth century government along with many other ideas which are called into being through a new realization of community needs. A health department cannot properly do the work of protecting the health of the people without control of the housing problem. Mr. Molitor made a plea for the placing of the control of building inspection and the approval of plans in the hands of the department of health, which should see that they conform to good housing and health laws. Such control should be exercised under the terms of a uniform state law, the state having oversight and final authority in the matter. A uniform state law would be of great value to architects and builders in that it would give them dependable legislation upon which they could rely in planning new structures. Where a town-planning commission exists, it should consult with the health board in planning for parks, playgrounds and schoolhouses. The local health board should be the working medium of the state department of health in regulating housing for another reason—that of expense to the state, as it has been proven that only by the communities themselves working through their own local health board can a reasonable distribution of the expense involved in prosecuting offenders be assured.

A Model Town With Houses Renting at $10 a Month

A model town, in many respects one of the most interesting of the recent practical solutions of a problem involving homes for workingmen in connection with an industrial plant, is now rising on the banks of the Juniata River, opposite Mount Union, Mifflin County, Pennsylvania. The plans provide for the erection of about one hundred houses at the present time, to be let at about $10 a month. These are arranged in a studied composition on a carefully platted acreage, in which provision is made for a 4-acre playground, a riverside park, reclaiming land now frequently flooded, an attractive railroad approach facing a community green of 1½ acres, and ample grounds for various public and semi-public buildings. The latter include a community house developed from an old building on the site, two churches, and a public school. The area platted is triangular in shape. The Juniata River forms one side, the tracks of the railroad the other. Three main roads are laid out, converging at the apex of the triangle. Rectangular blocks bordered by streets, in some cases open to pedestrian traffic only, provide sites for the small homes on relatively small lots. Each lot, normally 40 by 100 feet, is to have a few fruit trees, and some will be large enough for truck-gardening. Two terraces are recognized in the platting conforming to the topography—the first bordering the river, the second on rising ground extending up to the bordering railroad tracks. About 1½ acres of land will be set aside in the central section of the village for business, with a total store frontage of about 600 feet. The village center will include the railroad station, the community hall and the store district. Everything possible will be done to insure diversity in the design of the houses, for which six designs have been provided, three of single-family detached type and three of single-family semi-detached type. Each family has six rooms and bath and piazzas. In locating the houses on the lots and selecting the house design for the lots, the appearance of the street has been kept in mind. The arrangement of the houses then will not be monotonous, since great variety is obtained.

The property is owned and is being developed by the Mount Union Refractories Company, prosperous and scientific manufacturers of brick, whose plant is located across the Juniata River. The town plan was evolved by John Nolen, landscape architect of Cambridge, and the architectural work on the houses, stores and other buildings is in charge of Mann & MacNeille, architects of New York City. The town will be known as Kistler Industrial Village.

Sculpture Competition

The second competition for figures for the decoration of the Plainfield (N. J.) Municipal Building will be held by the Joint Committee of the Beaux-Arts Institute of Design and the National Sculpture Society. Information may be obtained from the Beaux-Arts Institute of Design, 257 West 57th St., New York City.

Institute Committees for 1917

The full list of Institute committees for the current year will be found on page 93 of this issue, where is usually printed the list of Chapters.

Structural Service Department

D. KNICKERBACKER BOYD, *Associate Editor*

In connection with professional societies and organized bodies working toward the improvement of building materials and methods, and the following Committees of the Institute:

CONTRACTS AND SPECIFICATIONS

FRANK MILES DAY, *Chairman* . . Philadelphia
M. B. MEDARY, JR., *Vice-Chairman*, Philadelphia
ALLEN B. POND . . . . . Chicago
SULLIVAN W. JONES . . . . . New York
FREDERICK W. PERKINS . . . . Chicago
JOS. EVANS SPERRY . . . . . Baltimore
J. A. F. CARDIFF . . . . . New York
GOLDWIN GOLDSMITH . . . . Lawrence, Kan.
JULIUS FRANKE . . . . . New York

BASIC BUILDING CODE

WILLIAM B. ITTNER, *Chairman* . St. Louis
W. W. TYRIE . . . . . Minneapolis
G. F. A. BRUEGGEMAN . . . . St. Louis
OWEN BRAINARD . . . . . New York
ROBERT STEAD . . . . . Washington
E. D. LITCHFIELD . . . . . New York

MATERIALS AND METHODS

THOMAS NOLAN, *Chairman* . . . Univ. of Pa.

FIRE-PREVENTION

ROBERT D. KOHN, *Chairman* . . New York
W. L. PLACK . . . . . Philadelphia
G. C. NIMMONS . . . . . Chicago
JOHN R. ROCKART . . . . . New York
CHARLES H. BEBB . . . . . Seattle
LYMAN A. FORD . . . . . New York

(Each Chapter has a corresponding member who is chairman of the Chapter Subcommittee.)

How to Use the Index

When information is desired on any particular material, look first in the General Index, always found at the end of the Structural Service Department in every number of the Journal. (In this number it is on page 147.) If the subject has been treated in the Journal in this department, a serial number will appear after the subject name, as for example, 2J1. The large figure 2 relates to the month of the year and indicates February, which means that the reference will be found in the February Journal. The large letter J indicates a subdivision of 2. The small figure 1 indicates a subdivision of J.

Under the subject heading in the General Index there will also be found references to manufacturers represented in the Industrial Section.

A part of the service of this Department will be to furnish inquirers with additional information, titles of books, names of authors or publishers, copies of articles, or in any way to afford help to architects wishing to ascertain the latest data available in connection with any material or method. For this service, address the Journal of the A.I.A., the Octagon, Washington, D. C. The service is free, except where clerical expense is involved, in which case a small fee will be charged to cover actual cost. The inquirer will be advised of the amount of the fee before any research work is undertaken.

FIRE PREVENTION AND PROTECTION ISSUE

Section I. Fire-resistive Materials

CONTENTS

Having in the January and February numbers covered foundational requirements in concrete and stone, and in cement and lime of our composite building or typical structure, and having in the same issues treated of the steel and iron work and of the concrete and stonework, our progress in the erection of such a building now reaches the third of the twelve stages and brings us to the point where the enclosing walls with their facings (other than stone), the floors, partitions and some roofings may now be considered, and the skeleton of the structure be brought near completion.

These forms of construction cover a wide range of materials and devices, and to simplify the classification they will be divided as follows: March, Serial No. 3, "Fire-resistive Materials;" April, Serial No. 4, "General Building Construction;" May, Serial No. 5, "Wood," all forms and uses.

All electrical features pertaining to fire- and safety-hazards will be referred to under Serial No. 6. "Electricity," and similarly gas features will be referred to under Serial No. 7, "Gas."

INDEX TO SUBJECTS TREATED IN THIS ISSUE

(For index of materials previously treated see the General Index, page 147)

3A U. S. Navy Department.
3A2 Architects and Fire-Prevention.
3A3 National Fire Protection Association.
3A4 National Board of Fire Underwriters.
3A6 Underwriters' Laboratories.
3A7 Associated Factory Mutual Fire Insurance Companies.
3C Other Agencies Concerned with Fire-resistive Materials.
3D Terra Cotta, Hollow Tile, and Brick.
3D5 Metal Lath, Gypsum, Asbestos, and Wired Glass.
3E1 Reports on Buildings under Fire.
3E2 Reports on Fire-Tests of Materials.
3F Fire-Tests by U. S. Bureau of Standards.

(The Fire-Prevention and -Protection issue, with the Section on General Building Construction, will be concluded in April.)

Fire-resistive Materials Section

3A1 Navy Department, U. S. A. State, War and Navy Building, Washington, D. C.

No division of the National Government is more concerned with the protection of metal and wood and the prevention of fire than is the Navy Department, because of its control of floating equipment. In this, especially when not in contact with land, the means to control and fight fires is self-contained and must be the utmost in availability and efficiency.

The Navy also has control over a large amount of construction on land, as well as at sea, and frequently in combination, so that its functions with respect to construction are divided.

Standards:

(*a*) For the use of the Government, specifications have been prepared by Boards on Uniform Specifications, representing the Treasury, War and Navy Departments. The "Specifications for Plumbing Fixtures, etc.," prepared by the Board on Uniform Plumbing Specifications will, with descriptions of other Navy Bureaus, activities of interest to designers and constructors of land edifices, be published under later serial numbers where the respective industries are concerned.

(*b*) Researches and investigations in connection with materials are constantly being conducted by all the technical bureaus of the Navy, either individually or in coöperation, and at the various Navy-yards. The results are not usually made public, but the conclusions drawn therefrom are utilized in the frequent revisions of the "Navy Department Specifications" relative to each material or industry affected, described under 3A1*a*2.

3A1a *Bureau of Supplies and Accounts, Navy Department, U. S. A.*

(1) *Publications:*

Among others: "Index to Specifications Issued by the Navy Department for Naval Stores and Material." This is revised quarterly and is received by the Structural Service Department through the courtesy of the Bureau. See (2) below.

The work of this Bureau, which is of especial interest to architects and building constructors, centers on matters of equipment where the use in vessels or appurtenances is applicable to land building construction. This will be evident from the many references which will be found to "Navy Department Specifications" throughout the Structural Service Department.

(2) *Navy Department Specifications:*

These are printed and issued by the Bureau of Supplies and Accounts as standards which obtain in securing estimates or having materials furnished or work done for all branches of the Navy. Copies of the Index (1), and of the specifications when in stock, may be obtained upon application to the Bureau of Supplies and Accounts, Navy Department, Washington, D. C.

3A2 Architects and Fire-Prevention

Architects and engineers should from the inception of their work maintain the closest coöperation with the forces organized to bring about a better understanding of those requirements in construction and occupancy which make for a lessening of the risk of loss in the capital invested in the insurance business.

Entirely aside from those ethical considerations, which will always seek the safety of the occupants and the protection of the structure and its surroundings, it should be borne in mind that insurance premiums are in reality a tax levied in the endeavor to stabilize the investment of capital upon which all industry depends.

It is a simple proposition that the less the loss, the less the tax; the less the coöperation at the inception, by those charged with building construction with those administering the tax, the greater the subsequent cost due to reinspection, alteration or readjustment, irrespective of eventual loss.

Therefore, besides observing all local building ordinances, the standards and other publications of the various authorities and controlling agencies hereafter described should be followed as closely as possible, and even when this be done, the local underwriters should in every case be consulted and their comment and suggestions obtained before construction is contracted for or work commenced. The Editor has the assurance of many local boards of underwriters (which, as pointed out by Mr. Woolson in his description of the National Board, have no connection therewith), and it has also been his invariable experience that these opportunities to discuss conditions before contracts are let, instead of afterward when vexatious and perhaps costly changes may be requisite to serve the best interests of the owner and of the community, are welcomed—never discouraged. (For Coöperation see 3A9*e* and 3G2.)

3A3 National Fire Protection Association Organized 1895

Secretary: Franklin H. Wentworth, 87 Milk Street, Boston.

Publications: (See pages 144, 145.)

Standards and literature on varied phases of building construction, fire-prevention and -protection, and on other matters of great importance and value to architects, engineers, constructionists and public-spirited citizens generally are issued as listed on page 144 under a special classified 3A3 extension index with other publications for members, prices and detailed information.

Among them are: "Standard Regulations for Fire-Protection and the Safeguarding of Hazards."

"Suggested State Laws for Regulating Fire-Hazards."

"Suggested Municipal Ordinances for Regulating Fire-Hazards," which have also been adopted by, and are the official standards of, the National Board of Fire Underwriters.

Of the above publications those of especial significance to architects and constructionists will be referred to under each industry, material, or subdivision in this and other issues of the Journal.

Many of these will be found, through use, to save much time, trouble and duplication of effort on the part of Architects and others, as well as to afford the satisfaction of having contributed toward the general adoption of standards, so valuable when measured by results obtained.

Purposes, Standards and Membership:

The National Fire-Protection Association has two functions. One is to make the "standards" under guidance of which the fire waste may be checked; the other is to edu-

cate the people in the observance of those standards and point out the grievous economic penalties for ignoring them.

The character of these standards, rules and requirements is shown by the list of publications printed on pages 144 and 145. The standards are made by the representatives of the membership organizations, included in which is the American Institute of Architects and 128 others. These representatives are men selected for expertness in one form or another of all phases of building construction or fire-prevention engineering and, serve the Association without pay. There is no public effort in the history of the nation to which there has been so freely given, over so long a period, any more of expert thought and painstaking technical investigation than to the National Fire-Protection Association.

This work of compiling and revising standards covering explosives, gases, oils, electric wiring, fire appliances and all methods of construction must continue indefinitely. It is a work for experts and commands the services of those members having not only technical education but wide, practical experience in their special callings.

These men meet throughout the year, having membership on various committees in the Association, of which there are a large number constantly at work. Those whose activities are of especial significance in connection with building construction are:

The Committee on Fire-resistive Construction, which is composed mainly of engineers and architects with Ira H. Woolson as Chairman, some five years ago decided to establish requirements of construction suited to buildings of the greatest fire-resistance and to define a "Standard Building" applicable to any occupancy, leaving, as much as possible, the details of construction for special occupancy and special use or hazard to be determined later as modifications of these standard requirements. This resulted in the publication of "Specifications for Construction of a Standard Building" (3A3*d*31), which "Standard" has served as a model or framework for the application of the various standard forms of construction adopted by the Association.

The Committee later drafted recommendations for forms of construction adapted to buildings of special use, including dwelling houses, and at the Convention in 1916 submitted specifications for a structure of the executive administration type known as "Office Building." This report of the Committee has been published as "Specifications for Construction of Office Building Grade" and is listed under 3A, page 145.

The Committee on Field Practice is made up of those especially qualified to pass upon details of construction and equipment and who are familiar with the necessity for the proper upkeep and maintenance of installations.

This Committee's knowledge and observations have resulted in the publication of "Field Practice" referred to frequently and listed under 3A3*d*1. It covers the more essential features to which especial attention should be given in order that the efficiency of installations should be maintained and conforms to the standards of the N. F. P. A. as published and promulgated by the National Board of Fire Underwriters to which references are made throughout.

The Committee on Manufacturing Risks and Special Hazards, during the recent year, gave especial attention to the correction of structural defects in existing buildings and submitted a report intended to be of practical use to persons in charge of property or the alteration of buildings. This report is illustrated and is replete with suggestions. It is entitled "Structural Defects, Suggestions for Their Elimination and Protection," listed under 3A3*d* 32*b*, also printed in the "Proceedings of the Twentieth Annual Convention, 1916."

The Committee on Protection of Openings in Walls and Partitions has promulgated regulations and recommendations for these important features of construction to which reference will elsewhere be made.

The Committee on Safety to Life will be mentioned in connection with "Exits, Stairways and Fire Escapes," Serial No. 4.

Many other Committees exist whose work, all of it important, concerns one phase or another of protection equipment and installation.

The Association meets annually in a three days' convention, at which the report of each committee working during the year on the various standards is presented by its experts and discussed by the convention before adoption. The progess of the nation in science, invention and the industrial arts makes constant revision of these standards imperative. The Association for over twenty years has been compiling and revising these standards, which are now the recognized national guide and authority, and are officially adopted by the National Board of Fire Underwriters and all other organizations interested in fire-protection or -prevention.

The proceedings of the annual convention are issued in printed form so that all members may study the reports and the discussions thereon at their leisure.

The Quarterly Magazine of the Association is unique in its special articles on fire-hazards, fire-protection and -prevention, and the economic effects of the fire-waste, and the monthly News Letter is of decided interest and keeps members posted on the latest developments in fire-protection engineering and building materials and construction.

Special studies are made of the effect of fire on concrete and other buildings of fire-resistive construction. Bulletins are regularly issued and, during each year, many individual papers and reports on specific topics are sent to members, besides copies of all the Association's standards as soon as they are completed and published.

The Association's membership is composed of architects, builders, merchants, manufacturers, warehousemen, lumbermen, engineers, fire-marshals, fire-wardens, fire-chiefs, electricians, credit men, bankers, insurance agents and inspectors, boards of trade, chambers of commerce, public libraries and many other organizations, individuals, firms and corporations. Any individual, firm, corporation or society is eligible to membership.

[Editor's Note.—It is with considerable satisfaction that attention is called to the fact that for two years past a member of the Institute, Mr. Robert D. Kohn, was President of the N. F. P. A., and that the present Treasurer of the Institute, Mr. D. Everett Waid, is a Vice-President—but, with regret, attention is drawn to the further fact that but fifty architects are members of the Association.]

3A4 *The National Board of Fire Underwriters* . Organized 1866

General Manager: W. E. Mallalieu, 76 William St., New York City.

Publications: (See pages 145, 146.)

Suggested regulations covering the installation of hazardous and protective devices, model building regulations and ordinances, and special reports on various subjects prepared by the engineers of the Board. A list of the publications distributed by the Board will be found on page 145 under a special classified 3A4 extension index.

The National Board of Fire Underwriters, an organization composed of 133 of the principal stock fire insurance companies, is supported by a pro rata tax upon the members, and has been in existence fifty-one years.

STRUCTURAL SERVICE DEPARTMENT

Organized in the troublous period following the Civil War, when unlimited rate competition and a rapidly rising fire ratio were threatening the solvency of American fire insurance, it sought to restore stability through a rigorous control of rates. At first these efforts met with considerable success, and to them is largely due the fact that so many companies were able to survive the double blow of the Chicago and Boston conflagrations in 1871 and 1872.

Difficulties arose, however, which made it necessary to abandon rate-control. This was done in 1877, since which date the National Board has exercised no jurisdiction or supervision of the question of rates, that power being entirely in the hands of local fire underwriters' associations, each having jurisdiction over certain specified areas. (See 3A5.)

Eleven years after its abandonment of rate-control, the National Board likewise ceased to regulate brokerage commissions. Following this final relinquishment of legislative power, the organization began a new phase in its history and rapidly developed into the great service institution, to both its members and the public, which characterizes its beneficent operations today.

In a sense, its name has become a misnomer, since it no longer exercises the functions of an underwriter. It has really become an investigative, standardizing, and distributing organization, dealing with the broad principles of underwriting and fire-protection. In this work it cooperates the best technically trained service it can secure with the wide practical experience of its members.

Its activities are conducted through standing committees under supervision of the Executive Committee and the direction of the General Manager. Most of these committees employ skilled experts who devote their entire time to work planned by the committees. The more important committees are the following:

The Committee on Laws makes a special study of the legal, legislative, and administrative phases of the relations of fire insurance to the public.

The Committee on Incendiarism and Arson, as its name implies, is organized to combat these most subtle and heinous of crimes which frequently destroy human life as well as property.

The Committee on Statistics and Origin of Fires collects and classifies fire-loss figures from fire-department records and other sources of public information. It critically studies this data and makes recommendations based upon the conclusions obtained.

The Committee on Fire-Prevention has for many years been one of the country's strongest influences for lessening the public fire-hazard. This Committee, at large expense, maintains a staff of field engineers under the direction of a Chief Engineer, Mr. George W. Booth, who are constantly engaged in inspecting the water-supply, fire-department equipment and efficiency, and fire-alarm system in the larger cities of the United States. Particular attention is devoted to the proper protection of congested valued districts and the removal of conflagration hazards.

It issues detailed reports covering these inspections and recommendations based thereon. These reports are furnished to members of the Board and to the city officials, but are not for general distribution. The Committee's recommendations have lead to extensive improvements in many cities.

The Committee on Construction of Buildings devotes its energies to encourage better building construction, and thereby endeavors to aid in reducing the enormous annual fire-waste. As the activities of this Committee are of more direct interest to the architect than the others, they are treated here in greater detail.

The most important work accomplished by this Committee was the drafting of a Model Building Code intended as a guide for the use of city commissions entrusted with the preparation of new building ordinances or the revision of old ones. (See 3A4*d*1.)

This Code was first issued in 1905. It has passed through four editions, and over 25,000 copies have been distributed. The last revision—that of 1915—was very radical, the form and text being completely changed. The volume is thoroughly up-to-date, and its engineering and fire-protection features represent the best current practice. The Code is furnished, without charge, to building commissions, and upon application is sent to architects, engineers and builders who desire to use it as a guide in safe construction. The Code has been adopted as a supplementary textbook in the engineering and architectural courses of several universities and technical schools.

The last revision was made by Ira H. Woolson, Consulting Engineer to the Committee, and formerly a professor in engineering at Columbia University, who has been engaged to prepare the Committee's publications and take charge of its rapidly increasing work of promulgating building construction standards and fire-protection information.

The Committee's office has become a clearing-house for distribution of such data. It renders a vast amount of gratuitous consultation service to cities which are revising their building codes, and results show that it is wielding a strong influence in eradicating pernicious building customs which have been such prolific contributors to our enormous and senseless annual fire-loss. The Code is being used as a guide by many cities in the revision of their building ordinances, and not infrequently it is copied practically as printed.

The Committee also distributes "A Suggested Building Ordinance for Small Towns and Villages" which was prepared jointly with a committee of the National Fire Protection Association. (See 3A4*d*2.)

The latest publication on safe construction issued by the Committee is entitled "Dwelling Houses," which deals specifically with the fire-hazards of this class of buildings and is full of suggestions for remedying such defects. Copies of this were furnished the Institute's Committee on Fire-Prevention for distribution to all members of the Institute. (See 3A4*d*3.)

Considering that the annual dwelling house property loss in the United States for the year 1915 (the latest figures available) was in excess of $40,000,000, and that it was accompanied by a large loss of life, the need of such a publication is apparent. The majority of dwellings are located outside the jurisdiction of municipal building laws, and as there are at present but two or three states which exercise authority over building construction, most dwellings are erected without any supervision whatever.

The Committee on Lighting, Heating, and Engineering Standards is the special intermediary between the Executive Committee and the Underwriters' Laboratories of the National Board of Fire Underwriters. The function of the Laboratories is to test and classify materials, constructions and devices according to their fire-resistive qualities, and to assure that the quality of the manufactured product is maintained equal to that of the sample tested. Details of the operations of the Laboratories are given elsewhere in the Journal.

The Committee on Clauses and Forms studies the intricate structure and phraseology of fire insurance policies, and offers proposals for betterment, but they are not mandatory upon local underwriting organizations.

The Committee on Adjustments operates principally as

a stabilizer when the relations between insurance companies and the assured have suddenly been thrown into an unbalanced or chaotic condition, as by a conflagration.

The Actuarial Bureau is the newest activity of the National Board, having been put in operation in 1915. It receives daily reports of practically all fire-losses paid by the insurance companies in the United States, averaging over two thousand (2,000) per day, and has a large force of tabulators, sorting, classifying and recording the vast amount of data contained in the reports.

Figures are compiled showing the number of fires and loss in each class of occupancy due to the various causes of fire. The accumulated figures are carefully studied, their meaning interpreted and conclusions drawn as to the relative hazard of construction, exposure and occupancy.

These statistics are the first really reliable data ever collected over the whole country upon this extremely important subject. They include the number of fires and insurance losses paid, segregated in accordance with the various causes, under each standard class of construction, whether protected or unprotected by water works and fire departments.

The recent history of the National Board has been one of rapidly increasing influence as a public service institution. It will be noted that most of its work is distinctly educational in character and of direct public benefit. It inaugurated and has vigorously sustained, through close and cordial relations with the National Fire Protection Association, the fire-prevention movement which is now finding expression throughout the country, both in the matter of public improvements and popular education.

The above summary indicates briefly the functions and scope of this great organization which, although it possesses no legislative powers and is sustained at private expense, is unquestionably one of the greatest constructive forces in the United States today.

IRA H. WOOLSON
Consulting Engineer to Committee on Construction of Buildings.

3A5 *Local Underwriters' Associations*

The local boards of fire underwriters, or fire insurance exchanges, are composed of the insurance companies or their officers or agents; some of the officers may also represent their companies in the National Board with which the local bodies have otherwise no official connection whatever. Each such organization is a separate and distinct association, complete within itself, having its own officers and different departments dealing with the special hazards which affect fire-insurance losses and other matters relating to the actual business of underwriting within its own prescribed territory.

They endeavor to establish equitable rates to cover the hazards; use their influence to create efficient private and public fire-protection; and encourage the enactment of proper building laws. It is their purpose and desire to coöperate with all local municipal and other authorities and with architects, owners and constructors of buildings to whom will be distributed the Standards of the National Board and other publications upon request and in the interest of their general observance. Some associations issue publications of their own.

3A6 *Underwriters' Laboratories*

Chartered by the State of Illinois, 1901

President: William H. Merrill, 207 E. Ohio St., Chicago.

Publications:

(*a*) Organization, Purpose and Methods, 1916.
(*b*) List of Inspected Mechanical Appliances.
(*c*) List of Inspected Electrical Appliances.
(*d*) List of Appliances Inspected for Accident Hazard.
(*e*) "Brick and Cement, Fire," Navy Dept. Specification, 50B6, May 1, 1916.
(*f*) "Bricks and Cements, Converter and Open Hearth," Ditto, 50B5, May 1, 1916.
(*g*) Electrical Data.
(*h*) Standard on Rubber-covered Wires and Cords.
(*j*) Procedure for Inspections at Factories and Labeling Rubber-lined Fire-Hose.
(*k*) Standard for Counterbalanced Elevator Doors.
Standard on Cabinets and Cutout Boxes.
Standard (Tentative) for the Construction and Installation of Materials for Lightning Rod Equipments.
Other Standards are now in mimeograph form.
[NOTE: (*a*) sent upon request; (*b*), (*c*), (*d*), and (*e*) revised semi-annually, sent upon request; (*f*) to (*k*) separate publications, supplied at $1 per copy.]

The work of the Underwriters' Laboratories was mentioned in the January Journal under 1B2*a*, and more fully described on page IX of the Industrial Section of that issue. More specific reference to its activities in fire-prevention matters will be found on page XII of the current Industrial Section. See also 3E3*b*.

The work of the Laboratories with respect to accident-hazards will be mentioned under Serial No. 5, and with respect to electrical matters under Serial No. 6.

3A7 *Inspection Department; Associated Factory Mutual Fire Insurance Companies*

Organized 1886

Secretary: C. H. Phinney, *Engineer, and Asst. Sec'y.* H. O. Lacount, 31 Milk Street, Boston, Mass.

Publications: (See page 146.)

"Approved Fire-Protection Appliances."
"Approved Electrical Fittings."
These are issued semi-annually, in April and October, and contain results of the tests and examinations of the various appliances which are, by the Mutual Companies, used as a basis for approvals.
Pamphlets.
Leaflets.
All these publications will be found listed under a special numerical index on page 146, and will be referred to in this and other issues of the Journal under various subdivisions or industries; those pertaining to lumber and wood construction in Serial No. 5, and to electricity in Serial No. 6.

The Associated Factory Mutual Fire Insurance Companies grew from the idea of a New England manufacturer who started the system in 1835. Other manufacturers became interested and it was agreed to share losses in their factory on a mutual plan. They studied the causes of fire, profited by each others' experiences, and through such coöperation reduced the cost of their insurance materially. This led to the formation of a mutual fire insurance company and later similar companies were organized which joined in forming the present great system, that now oversees the protection and provides the insurance for a large part of the better manufacturing properties in the United States and Canada, aggregating over three and one quarter billion dollars in value. Insurance is distributed among the following, comprising the Associated Factory Mutual Fire Insurance Companies.

1. Manufacturers Mutual Fire Insurance Co., Providence.
2. Rhode Island Mutual Fire Insurance Co., Providence.
3. Boston Manufacturers Mutual Fire Insurance Co., Boston.
4. Firemen's Mutual Insurance Co., Providence.
5. State Mutual Fire Insurance Co., Providence.
6. Worcester Manufacturers Mutual Insurance Co., Worcester.
7. Arkwright Mutual Fire Insurance Co., Boston.
8. Blackstone Mutual Fire Insurance Co., Providence.
9. Fall River Manufacturers Mutual Insurance Co., Fall River.
10. Mechanics Mutual Fire Insurance Co., Providence.
11. What Cheer Mutual Fire Insurance Co., Providence.
12. Enterprise Mutual Fire Insurance Co., Providence.

13. Merchants Mutual Fire Insurance Co., Providence.
14. Hope Mutual Fire Insurance Co., Providence.
15. Cotton and Woolen Manufacturers Mutual Insurance Co., Boston.
16. American Mutual Fire Insurance Co., Providence.
17. Philadelphia Manufacturers Mutual Fire Insurance Co., Philadelphia.
18. Rubber Manufacturers Mutual Insurance Co., Boston.
19. Paper Mill Mutual Insurance Co., Boston.

The Associated Factory Mutual Fire Insurance Companies established in 1886, an Inspection Department, or Engineering Bureau, to take over the work of inspection of all the Mutual risks, the making of plans and appraisals of the properties insured, and the engineering work along all lines of fire-protection engineering previously done by the individual companies for the information of themselves and the Mutual members. Since 1896 the Bureau has also been responsible for the adjustment of all losses.

The work in fire-protection engineering soon called for the testing of fire appliances, and in 1890 a laboratory was established under the direction of the Inspection Department, as mentioned under 3A8.

A large amount of pioneer work in fire-protection has been done in the Inspection Department and Laboratories, notably Fire-Stream Tables prepared from data obtained in an extensive series of tests by John R. Freeman; improved building construction in the slow-burning or mill-construction type of factory building and the development of the private fire-protective equipment, involving particularly the design, construction and installation of the steam, rotary and centrifugal fire-pumps and of automatic sprinklers and dry-pipe valves. At the present time about 1,000 automatic sprinkler joints are on test there under daily observation. A large amount of work has also been done on rubber compounds, principally as applied to the linings of fire-hose and valves in Underwriter fire-pumps. During the past several years the subject of dry rot of factory timber has been very thoroughly investigated, resulting not only in a suggested specification for long-leaf pine for use in Mutual risks, but also a treatment of timber to prevent or arrest decay. This important piece of work will be referred to in the Journal under Serial No. 5, "Wood," and later in this section.

There has recently been completed an exhaustive investigation on the subject of fire-hazards of cutting oil, in which a large percentage of kerosene frequently is used.

When the resources of the Laboratory have been exhausted on any particular device, more can be learned through service in the field, and this field experience is being brought to the Laboratories continuously by the inspectors of the Inspection Bureau. Again, a large amount of information can frequently be obtained from the investigation of fires, which is generally made in connection with the adjusting of losses, and this first-hand, valuable data is immediately available to the Laboratories. These features are believed to be real assets of the Laboratories, and assist materially in reaching a correct conclusion, which finds application throughout a large and increasing field. Advice on all subjects having to do with the prevention of fires and protection against fires is freely given property-owners carrying Mutual insurance.

3A8 *Factory Mutual Laboratories*

Established 1890

Engineer: W. O. Teague, 31 Milk Street, Boston, Mass.

This laboratory, known as the Factory Mutual Laboratories, was established under the direction of the Inspection Department, as above noted. It issues no publications, as these emanate from the Inspection Department. From time to time, hazards incident to manufacturing processes have been investigated in the Laboratories, and the work has greatly increased until now they occupy the central plant at the above address, and in addition there is a hydraulic station at Lowell, Mass., and a fire-test house at North Woburn, Mass.

The Laboratory is designed primarily for the use of mill-owners whose properties are insured in the Associated Factory Mutual Fire Insurance Companies. In general only such devices and subjects are investigated as will be of interest to Mutual members, and there is no charge for this service, either to the parties submitting the appliances or to the members. See also 3E3*b*.

3A9 *American Institute of Architects*

(For reference see 1A8)

Of the various committees of the Institute the four most intimately concerned with building construction, and hence with fire-prevention matters, are as follows:

3A9a *Committee on Fire-Prevention*

In the past the Committee has been mainly active representing the architects at the conventions of the National Fire-Protection Association and particularly active in the committee work of that Association. Under the past chairmanship of Mr. Julius Franke of New York, it distributed to the architects throughout the country valuable information on the subject of fire-protection. The new Committee just organized has not yet had time to plan out its campaign. The Chairman realizes that the enlightenment of the average architect on the subject of fire-protective design is a mighty difficult job. A plan is being considered at present whereby the Committee, in coöperation with other organizations, might publish a series of structural-service sheets or details showing clearly the methods of fire-resistant construction in all types of buildings and in all parts of buildings.

ROBERT D. KOHN, *Chairman.*
Institute Committee on Fire-Prevention.

3A9b *Committee on Basic Building Code*

3A9c *Committee on Materials and Methods*

The reports of these Committees, as presented to the last Convention and printed in the "Proceedings" of the Institute, will be found of much interest structurally. These Committees will, of course, coöperate in all ways possible with the Committee on Fire-Prevention and provide valuable assistance to the Structural Service Department. The Chairman of the latter Committee has already addressed all members of subcommittees on the subjects covered and to be treated in this Department.

3A9d *Committee on Contracts and Specifications*

See "Fire Insurance" (4H) for practice recommended by the Institute in respect to this matter.

3A9e *New York Chapter, American Institute of Architects*

Organized 1867

Secretary: Stowe Phelps, 20 West 43d St., New York City.

"Realizing the vital relation of the architect's work to the causes which produce the enormous annual economic waste and loss of life due to fire, the New York Chapter, some six or seven years ago, formed a Fire-Prevention

Committee. This Committee coöperates with the New York Board of Fire Underwriters.

"The former Chairman of the Committee, Mr. Julius Franke, working with the assistance of Mr. F. J. T. Stewart of the Underwriters, prepared and sent out two years ago a very valuable booklet of general information for architects with regard to the important points to be considered in the design of buildings from the point of view of fire-prevention and low insurance rates. (See 4B2*e*1.)

"Since then the Committee on Fire-Prevention has been sending out to the Chapter members such of the fire reports of the Underwriters as deal with buildings in which obvious and curable defects of design have contributed toward the fire-loss. These reports are printed by the Underwriters and submitted to the Chairman of the Committee for his opinion as to whether or not they will be of value to the architects. For reports of value, the Chapter pays part of the cost of printing and mailing."

J. A. F. CARDIFF, *Chairman*,
Fire-Prevention Committee, New York Chapter A. I. A.

3A9*f* *Joint Committee on City Departments*

"The New York Chapter also has one other field of coöperation with the Underwriters through the 'Joint Committee on City Departments.' In this Committee the delegates of the Chapter, the Underwriters, the building trades and the engineers come together to discuss any questions affecting the building interests of the city. This Committee is very active in the furtherance of fire-protection ordinances and laws, and in its opposition to amendments that are liable to lower the standards of fire-protection work." J. A. F. CARDIFF, *Chairman*,
Fire-Prevention Committee, New York Chapter A. I. A.

[EDITOR'S NOTE: Other Chapters are invited to communicate data on any other similar local activities.]

3A10 *Reports of Other Committees*

(*a*) The Report of a Special Committee of the American Institute of Architects relative to the work of the Underwriters' Laboratories will be published in Section II, April issue.

(*b*) Reference will also be made in same issue to the Committee on Fire-prevention in the American Society of Mechanical Engineers.

3B1 *Fire Marshals' Association of North America*

President: L. T. Hussey, Topeka, Kans.

Publications:

Proceedings of the Convention, issued annually. In this volume papers and addresses on subjects affecting state building regulations, laws authorizing state fire marshals to condemn and remove buildings that are fire-hazards, and others of similar purport, with the discussions and resolutions, are printed.

Its membership consists of the Fire Marshal, Fire Commissioners and their deputies of each state, who are charged with the duties defined as those of the State Fire Marshal of Massachusetts in the original law of the state. Such official may delegate as his representative at any meeting or on any committee any person officially connected with his department.

3B2 *International Association of Fire Engineers*

Organized 1873 as the National Association of Fire Chiefs; name changed in 1894

Secretary: Chief James McFall, Roanoke, Va.

Holds annual meeting at which committees report, papers are read and addresses made which are constantly being printed as valuable recommendations or contributions toward the improvement of fire-fighting apparatus and methods.

As has been said in the "American-La France Bulletin," "Probably no other body of men have devoted themselves so silently, watchfully and constantly to the welfare of the people, served progress so faithfully, or have in forty-four years rendered such a mighty service in the saving of life and property as the members of this organization."

3C Other Agencies Concerned with Fire-resistive Materials

In addition to the foregoing governmental departments and organizations interested in fire-prevention, fire-protection and fire-fighting, the following are known nationally for their interest, through investigation, production or manufacture of materials used in fire-resistive construction, with particular reference to burnt clay, which will be treated herein as a product and to metal lath, metal appliances, gypsum and asbestos, which will be referred to as accessories. The latter will again be referred to as products in other serial numbers.

In later serial numbers, also, burnt-clay products other than brick and terra-cotta will be referred to in connection with other industries, and wired glass, as a product, will be more fully treated.

It will be recalled that concrete construction and structural steel have been treated in Serial No. 1, and stone and slate in Serial No. 2.

3C1 *American Ceramic Society, Inc.*

Edward Orton, Jr., Department Ceramic Engineering, Ohio State University, Columbus, Ohio.

Publications:

(*a*) "The Transactions" in seventeen volumes, varying in price from $4 each, in paper, to $6.25 in cloth.

(*b*) "A Bibliography of Clays and the Ceramic Arts," Dr. John C. Branner, 1906. Contains 6,027 titles of works on ceramic subjects. Cloth, $2.

(*c*) The collected writings of Dr. Herman August Seger, Vol. I, p. 552, cloth, $7.50; contains:
(1) Treatises of a General Scientific Nature.
(2) Essays relating to Brick and Terra Cotta, Earthenware, and Stoneware and Refractory Wares.

(*d*) Vol. II, p. 605, cloth $7.50; contains:
(1) Essays on White Ware and Porcelain.
(2) Travels, Letters and Polemics.
(3) Uncompleted works and extracts from the archives of the Royal Porcelain Factory.

(*e*) List of papers and discussions contained in "The Transactions," —furnished upon request.

Its work has been confined to discussions of the many little-understood phases of the ceramic industry and has not yet reached the stage of definite specifications. Holds an annual meeting from which the resulting contributions to the development of the whole clay-working industry, published in "The Transactions," are to be considered as of great import.

3C2 *Educational Research Work* (See also 1B3*a*)

As mentioned in Serial No. 1, the colleges and universities of the country are performing distinctive ser-

vice in the development of materials and methods pertaining to the structural industries. Many of those listed maintain departments or branches devoted to investigation and study in clays and clay-working. The University of Illinois, on December 6 and 7, 1916, formally dedicated its recently completed Ceramic Engineering Building. Among others contributing to the development of the ceramic arts are Ohio State University, Department of Ceramic Engineering, Iowa State College, Rutgers College, and the New York State School of Clay-working and Ceramics.

(*a*) University of Illinois Engineering Experiment Station, Urbana, Ill. Established 1903 to carry on investigations in engineering and to study problems of importance to professional engineers and to manufacturing, railway, mining, constructional, and industrial interests of the state.

Publications:

(1) Circulars and (2) Bulletins on important phases of problems affecting architects as well as engineers.

Each bulletin is subject to a free initial distribution, on the basis of existing mailing-lists. It is also placed on sale with authorized agencies, both in this country and abroad. A limited number of copies is available for free distribution upon request, after the initial distribution. As the supply approaches exhaustion, it is placed upon a reserve list and withdrawn from free distribution.

A name is placed upon the regular mailing-lists of the Station at the request of the person, institution or company so desiring. These lists are divided into six classes: All-Bulletin, Structural, Electrical, Fuel, Railway, and Notification. In requesting a name placed on the list state class of bulletins desired.

3C3 *The Refractories Manufacturers' Association*

Secretary: Frederick W. Donahoe, 220 S. Michigan Ave., Chicago.

Issues no publications—other than (*a*) and (*b*)—that would interest anyone not directly engaged in the manufacture of fire-brick and similar refractories.

Objects are to promote a closer relation between the manufacturer, dealer and consumer of refractories of all kinds; to improve in every way the product of its members and to standardize, as far as possible, the various designs and shapes manufactured.

Holds an annual meeting, and, like so many others mentioned herein, maintains relations with the U. S. Bureau of Standards and other agencies working to improve the nature, understanding and use of structural materials.

Standards:

Has committees to work with the American Society for Testing Materials, with the Refractories Committee of the American Gas Institute, and on Standardization of Fire Clay, on Silica, and on Government Adoption of Standards.

As the beginning of a series of charts, issues two, which are of Institute standard size, entitled:

(*a*) "Standard 9 inch and 9 inch Series Brick Shapes Adopted by The Refractories Manufacturers' Association, July 29, 1913."

(*b*) "Tables Showing the Number of Brick Required to Turn Various Circles, the Brick Being of Standards Adopted by the R. M. A."

3C4 *National Terra Cotta Society*

1 Madison Avenue, New York — Founded January 1, 1912

Publications:

(*a*) "Architectural Terra Cotta, Standard Construction." July, 1914.
A book of construction drawings (70 plates) showing the most approved form of terra cotta construction for cornices, friezes, balustrades, etc., with anchorage irons and detailed notes, complete.

(*b*) Architectural Terra Cotta Brochure Series.
Vol. I. "The School."
Illustrated by photographs of many modern school buildings, erected entirely or in part of terra cotta.

(*c*) Vol. II. "The Theatre."
Illustrated by many photographs of terra cotta theatre buildings.

(*d*) "Store-fronts in Terra Cotta."
Illustrating and describing the appropriate use of architectura terra cotta for the small store-front.

(*a*) Free to architects—$5 to general public. Others upon request to qualified inquirers.

Objects:

To encourage the production of the best materials and the maintenance of high and uniform standards of work; to spread the knowledge of the many advantageous qualities of good architectural terra cotta by widely advocating its merits; to coöperate in the investigation and study of the more important technical and other problems of the business; to advance mutual business interests in every legal and proper way without in any manner, directly or indirectly, agreeing to maintain prices or suppress competition; to promote a feeling of confidence and friendship among the members, so as to secure the benefits of the several objects above set forth.

Standards: See publication (*a*).

3C5 *The American Face Brick Association*

Secretary: R. D. T. Hallowell, Fulton Building, Pittsburgh, Pa.

Issues no publications dealing with technical subjects. Membership is composed of manufacturers and distributors of facing bricks of all kinds throughout the country.

Its object is to promote the interests of its members, to conserve the resources and increase the efficiency of the entire face-brick industry. Holds a meeting annually, at the last of which, in December, 1916, two important policies in modern trade development were adopted, namely: Uniform Cost-Finding and the Open Price-Plan.

3C6 *The National Brick Manufacturers' Association*

Organized 1886

Secretary: Theodore A. Randall, Indianapolis, Ind.

Publications:

(*a*) The Convention Proceedings, other transactions and reports of committees are published in full in *The Clay Worker*, the official organ of the Association.

Is distinctly an educational organization, formed to relieve the clay trade of the "rule-of-thumb" methods which formerly characterized it. Its purpose is also to promote the interests of the makers and users of clay products.

Standards:

(*b*) Has a committee on technical investigations and holds a convention annually, at one of which, in 1893, standards were adopted for the sizes of bricks. These were reaffirmed in 1899 and still obtain. See Standards (3D3*c*).

3C7 *National Building Brick Bureau, Inc.*

Secretary-Manager: Theo. A. Randall, 211 Hudson St., Indianapolis, Ind.

Publications:

Pamphlets and reprints, entitled "Build with Brick," and others.

Its chief purpose is to advocate the advantages and eventual economy of brick and substantial building construction and to encourage a greater use of brick in structural work of all kinds. Holds an annual meeting.

3C8 *Building Brick Association of America*

Secretary: H. J. Lee, 40 W. 32d St., New York.

Organized six or seven years ago for the purpose of providing publicity for the brick business and was supported by brick manufacturers. A series of competitions were held through the medium of the *Brickbuilder*, and over one thousand plans were secured for brick houses. These were divided into three groups and published in three books, entitled:

(*a*) "One Hundred Bungalows." 50 cents.
(*b*) "A House of Brick of Moderate Cost." 50 cents.
(*c*) "A House of Brick for $10,000." 25 cents.

In addition to these a large amount of general literature was published under the following titles:

(*d*) "The Beauty of a Brick House." 5 cents.
(*e*) "The Maintenance of a Brick House." 5 cents.
(*f*) "The Brick House Safe from Fire." 5 cents.
(*g*) "Brick or Frame: Which?" 5 cents.
(*h*) "A Revolution in Building Materials." 5 cents.
(*j*) "The Cost of a House—a Comparison between Brick, Wood, Cement and Hollow Block Construction," J. Parker B. Fiske. 10 cents.

Support was withdrawn to such an extent that this Association is now in the process of liquidation. In a sense it laid the foundation for the American Face Brick Association, which has since been formed and is taking up some of the activities of the former.

[NOTE.—A limited supply of the above publications remain, and copies may be had at the price given upon application to the Secretary.]

3C9 *National Paving Brick Manufacturers' Association*

Secretary: Will P. Blair, Engineers Building, Cleveland, Ohio.

Publications:

(*a*) "Dependable Highways," monthly, $1 a year.

Purposes:

Dissemination among its membership of technical knowledge relating to the manufacture of their product; to bring to the attention of the public the merits of vitrified brick as a paving material; to influence to the greatest possible extent the proper construction of brick streets; furnishing faithfully information regarding brick and other materials, and comparative values as pavements.

Standards:

(*b*) Specifications for the Construction of Vitrified Brick Street Pavements and Country Roads (furnished upon request), containing:

(1) Green Concrete Foundation,
(2) Sand-Cement Superfoundation,
(3) Sand-Cushion Type.

The preparation of these specifications is worthy of especial comment because of the evidence given that an organization expends effort and energy upon the development of the proper use of the material with which it is concerned and not alone upon the improvement of the material itself.

3C10 *Hollow Building Tile Manufacturers' Association of America.*

(Information not obtainable.)

3C11 *The Associated Metal Lath Manufacturers*

Publicity Bureau, Swetland Building, Cleveland, Ohio.

Publications:

(*a*) "Metal Lath Hand Book." Copyrighted 1915. Bound in stiff cloth with 128 pages of text, detail drawings, and other illustrations, together with notes on acoustics, specifications for plastering and other information. Includes results of tests and makes recommendations for the best methods of using metal lath in building construction.
To obtain and for outline of contents see Industrial Section page XIV and XV.

Purpose:

To standardize the manufacture, use and sale of metal lath, so that the architect may be familiar with the grade, weight and type to specify for every kind of work, the contractor may know definitely what he must figure on, and the dealer will best know what materials to carry in stock. Has carried out fire-tests in the East and West to determine the value of metal-lath construction in comparison with other materials for the same purpose, and has conscientiously endeavored to formulate the standard construction drawings and specifications for the use of metal lath published in "Hand Book" (*a*).

Elaborate tests of stucco and metal lath are now being made by the Bureau of Standards in which the Association is coöperating. (See 3E3g.) Progress report will soon be published of this and also of tests for soundproofing partitions and walls which are now being made at one of the great universities for this Association.

In reviewing its work less than two years ago, the Association saw that, while it was accomplishing a great good for the metal-lath industry, the vital need was to have immediate and reliable information regarding the prices quoted on metal lath, and the open-price plan was thereupon adopted.

Each member notifies the office of the Association of any change in his quotations, and these are promptly bulletined to the other members.

This simple, fair and right exchange of true market information has cured the cancer of distrust, promoted intelligent competition and put the metal-lath industry on a higher plane.

For list of component companies, for detail drawings and other information on the use of metal lath see Industrial Section, pages XIV and XV.

3C12 *Gypsum Industries Association*

Reference later

3C13 *Asbestos Manufacturing Associations*

Reference later.

3C14 *National Glass Distributors Association*

Reference later.

3D Terra Cotta, Hollow Tile and Brick

(Pottery and soil-pipe later under Plumbing; also wall, floor and roof tile under later serial numbers.)

The total value of all clay products marketed in 1915 was $163,120,232, included in which it is interesting to note that "common" bricks figured to the quantity of seven billion one hundred forty-six and a half million.

Brick and tile continue to form approximately four fifths and pottery one fifth of the total, though the pot-

tery products have been gradually increasing of late years.

The most prominent features in the industries were (1) the large increase in production and the even larger increase in value of common brick in Cook County, Ill. The production in 1915 (739,173,000 brick) made it the rival of the New York portion of the Hudson River region, the output of Cook County being less in quantity by only 2,395,000 brick and greater in value by more than $1,000,000; (2) the large increase in production and value of fire-brick; (3) the increase in value of front-brick; (4) the large increase in value of clay products in Illinois and Pennsylvania; (5) the large decrease in value of sewer-pipe; and (6) the small increase in average price per thousand of common brick and the decrease in average price of other varieties of brick.

Clay products, except the highest grade, are made principally for local consumption, every state being a producer of clay wares, their low value preventing transportation for any considerable distances. Hence none but the highest grades of ware, principally pottery, are imported, and the European war has had little direct effect on the brick and tile industries. (Notes from Clay-Working Industries and Building Operations in the Larger Cities [3D1*c*].)

3D1 *Information Obtainable*

(*a*) The U. S. Geological Survey has issued a great many pamplets and bulletins (2A1*d* and *g*) dealing with clay resources and various phases of the clay-working industry. Specific information will be furnished by the Journal or complete catalogue of all publications may be obtained as noted under 2A1.

(*b*) See, also, chapters on "The Clay-Working Industries" in "Mineral Resources of the U. S." (2A1*c*) in which all phases are treated and complete statistics given annually.

(*c*) The separate chapter for 1915 (2A1*d*) published December 22, 1916, is available and is entitled "Clay-Working Industries and Building Operations in the Larger Cities"—46 pp. of valuable statistics.

(*cc*) The U. S. Bureau of Mines (2A2) in its work on the technology of clays, has issued Bulletin 53, "Mining and Treatment of Feldspar and Kaolin in the Southern Appalachian Region," and Bulletin 92, "Feldspars of the New England and Northern Appalachian States," and Technical Paper 99, "Probable Effect of the War in Europe on the Ceramic Industries of the United States."

(*d*) In the "Annual Report of the Chief of Ordnance, Watertown Arsenal" (1B1*b*) will often be found results of tests on clay products.

See also "Progress and Current Activities" (3D4) for tests by Bureau of Standards and others on clay products.

(*e*) See "Report of Committee C3 on Standard Specifications for Brick: I, Building Brick, II, Paving Brick." (The latter adopted as a standard), in "Proceedings" A. S. T. M. (1A4), Vols. XIII, XIV and XV, containing results of tests and other data and suggestions concerning building brick.

(*f*) "Practical Methods for Testing Refractory Fire-Brick," C. E. Nesbit and M. L. Bell Pp. 349–378 "Proceedings" A. S. T. M., Vol. XVI, pt. 11.

(*g*) See American Ceramic Society for list of informative publications (3C1), (*b*), (*c*) and (*d*). Use (*e*) as finder for valuable papers and discussions published annually in The Transactions (*a*).

(*h*) "Tests of Brick Columns and Terra Cotta Block Columns," A. N Talbot and D. A. Abrams. 1909. 25 cents. University of Illinois Engineering Experiment Station (3C2*a*2); also "An Investigation of built-up columns under load," A. N. Talbot and H. F. Moore. 1911. 35 cts.

(*j*) Journal of the Society of Constructors of Federal Buildings (2A4*a*).
(1) "The Manufacture of Vitrified Brick," C. B. Sullivan. November, 1914.
(2) "Rough-Texture Brick: A Query," J. A. Sutherland. May, 1916.
(3) "Architectural Terra Cotta," Thos. F. Armstrong. March, 1916.

(*k*) "Notes on the Compressive Resistance of Fire-Stone, Brick Piers Hydraulic Cements, Mortars and Concretes, Gen. Q. A. Gilmore.

(*l*) "Wall Construction" being Chapter XX of "Fire-Prevention and Fire-Protection" by Joseph Kendall Freitag, treats of ornamental terra cotta, with many construction details and notes, and of structural terra-cotta walls and brickwork.

(*m*) See "Kidder's Pocket Book:"
(1) "Data on Bricks and Brickwork," pp. 1454–1462.
(2) "Terra Cotta, Hollow Tile and Brick" (see Index to Kidder's).

(*n*) For brick construction and data see "Trautwine's Civil Engineer's Handbook."

(*o*) See "Building Construction and Superintendence," F. E. Kidder. Part 1, "Masons' Work."
(1) "Bricks and Brickwork," Chapter VII.
(2) "Architectural Terra Cotta, Thomas Nolan. Chapter VIII.
(3) "Form of Specifications (for all parts of a building) Including Architectural Terra Cotta and Brickwork," Chapter XIII.

(*p*) See "The Building Estimator's Reference Book," Frank R. Walker. Sections on Terra Cotta, Hollow Tile and Brickwork.

(*q*) See "Building Trades Handbook:"
(1) "Brick Masonry." (2) "Chimneys and Fireplaces." (3) "Hollow-Tile Construction."

(*r*) See the nine publications of the Building Brick Association of America listed under 3C8.

(*rr*) See "Hollow Tile Construction," N. F. P. A. Quarterly (3A4*h*), Vol. 7, No. 1; and "Terra-cotta or Tile Blocks," Vol. 4, No. 4.

(*s*) Read "Standardizing Face Brick," F. W. Donahoe, "Brick and Clay Record," October 3, 1916.

(*ss*) "The Development of the Ceramic Industries in the U. S." A "communication" by A. V. Bleininger, presented before the Franklin Institute, Philadelphia, Nov. 2, 1916.

(*t*) See "Brick Houses and How to Build Them," Radford.

(*u*) See "Practical Brick and Tile Book," Dobson-Hammond.

(*v*) See "Clays, Their Occurrence, Properties and Uses," H. Ries.

(*w*) Catalogue, Architectural Exhibition, 1913, St. Louis Architectural Club contains an excellent treatise on brickwork, detailed and illustrated, with an introduction by Wm. B. Ittner.

(*x*) See "Brickwork and Masonry," Mitchell; "Bricks and Tiles," Dobson; "Clay-workers' Handbook," Searles; "Details of Building Construction," Radford.

(*y*) "The Brick Church and Parish House," published 1915 by Hydraulic Press Brick Co., containing Notes on Church Architecture in America and plates and illustrations of the "Brick-builders' Competition."

See also references under Buildings and Structures in General 4B.

See also Other References in February Journal under Stone Masonry 2C4 and under Stone in General, 2J5.

For other information pertaining to Terra Cotta, see, also, Industrial Section: Atlantic Terra Cotta Co., page xvii; Federal Terra Cotta Co., page xix; O. W. Ketcham, page xvi; Northwestern Terra Cotta Co., page xviii; with respect to Brick, see Hydraulic Press Brick Co., page xx.

For information and detailed drawings pertaining to Guastavino Dome Construction, see 2nd cover.

See, also, "Atlantic Terra-Cotta" printed monthly for architects and distributed by that Company.

3D2 *Practice Recommended and Suggested*

By N.F.P.A.

(*a*) "Chimneys, Flues and Fireplaces, To Provide for the Safe Construction of" (3A3*c*1).

(*b*) Field Practice (3A3*d*1): Chapter II, "Furnace Stacks, Chimneys and Flues;" Chapter VII, "Chimneys and Flues, Their Common Dangers, Means of Safe Construction, Repairing and Maintenance."

(*c*) "Chimneys, Flues and Fireplaces." (3A3*e*3).

By National Board of Fire Underwriters:

(*d*) Building Code (3A4*d*1): Part VI, "Walls," pp. 34–50.

(*e*) "Dwelling Houses" (3A4*d*3): Part III, "Walls," pp. 21–31. See, also, 3A4*d*2 and *d*4.

By National Terra Cotta Society:

(*f*) See 3C4*b*, *c*, and *d*. The School, The Theatre and Store-fronts. See, also, Standards (3C4*a*), the same, though showing carefully prepared detailed drawings for construction, does not include any basic recommendations or specification data for setting.

By National Fireproofing Co.:

(*g*) For suggested details of wall construction with hollow-tile building-blocks and for "Manufacturers' Standard Specifications" prepared by that Company in collaboration with the editor of the Structural Service Department while acting as Consulting Architect to Sweets Catalogue Service, see pp. 304, 305, "Sweets Architectural Catalogue, 1916."

3D3 *Standards Adopted*

(Independent of existing municipal and state building codes which obtain in respectative localities.)

By the N.F.P.A.:

(*a*) "Specifications for Construction of a Standard Building" (3A3*d*31). Report of Committee on Fire-resistive Construction.

By the National Terra Cotta Society:

(*b*) "Architectural Terra Cotta, Standard Construction (3C4*a*).

By the National Brick Manufacturers' Association (3C6*b*.):

(*c*) The following are the sizes officially adopted as Standard: Common brick, 8¼ x 4 x 2¼ inches; paving brick, 8½ x 4 x 2½ inches; pressed brick, 8⅜ x 4 x 2⅜ inches; Roman brick, 12 x 4 x 1½ inches; Norman brick, 12 x 4 x 2⅜ inches.
It is to be noted that, due to the different kinds of clay used and varying degrees of heat by reason of location of bricks in the kiln, these sizes will naturally vary slightly, though presumably not enough to affect any layout which allows for ample jointing.

By the A.S.T.M. (1A4*c*):

(*d*) "Standard Specifications for Paving Brick," Serial Designation C7-15.

By Navy Department, U. S. A. (3A1*a*2)

(*e*) "Brick and Cement, Fire," Navy Dept. Specification, 50B6, May 1, 1916.
(*f*) "Bricks and Cements, Converter and Open Hearth," Ditto, 50B5, May 1, 1916.

By the National Paving Brick Manufacturers' Association:

(*g*) "Specifications for the Construction of Vitrified Brick Street Pavements and Country Roads" (3C9*b*).

By the Refractories Manufacturers' Association:

(*h*) "Standard 9 inch and 9 inch Series Brick Shapes" (3C3*a*.)
(*j*) Tables showing the number of bricks required to turn various circles (3C3*b*).

3D4 *Progress and Current Activities*

(*a*) *Strength of Brick Piers.* The investigation of the strength of large brick piers, which has been conducted during the previous two years, has been confined to brick selected from the important geographical districts east of the Mississippi. The bricks have been classified individually according to the tentative standards recommended by the American Society for Testing Materials. The experimental work of this investigation has been completed for piers constructed from the product of the Chicago and Pittsburgh districts. The work will be continued for the remaining districts during the coming year. This research is being carried on in coöperation with the National Brick Manufacturers' Association.—From Report Bureau of Standards, 1916, 1A2*a*.

(*b*) *Strength of Hollow Building Tile.* During previous years, numerous tests of building tiles from different geographical districts have been made, and the data is being studied and coördinated for publication. In addition, a number of tile walls have been tested under compression and transverse forces to determine the physical laws and most efficient types of construction, appropriate mortars, best type of bond, and the relation of strength to hardness of burn. This investigation will be continued during the coming year. It is hoped to furnish adequate data for outlining standard methods of testing tile and preparing consistent specifications for the use of manufacturers and engineers.—From Report Bureau of Standards, 1916, 1A2*a*.

(*c*) *Effect of Pressure upon Fire-Bricks at Furnace Temperatures.* In coöperation with the American Gas Institute and the American Refractories Manufacturers' Association, tests have been carried on for the purpose of correlating the effect of varying pressures upon clay firebricks at the temperatures 1,300 degrees and 1,350 degrees C. The results obtained have been made the basis of tentative specifications to be adopted by the Gas Institute.—From Report Bureau of Standards, 1916, 1A2*a*.

3D5 *Metal Lath, Gypsum, Asbestos and Wired Glass.*

Further reference to these will be made under later serial numbers.

(*a*) See "Mineral Resources of the U. S.," Part Non-Metals (2A1, 2), chapters on Gypsum and on Asbestos.
(*b*) The U. S. Bureau of Mines (2A3) expects to issue within the next few months a report on the manufacture of gypsum.
(*c*) For references to metal lath in this section see 3C10 and 3E3*g*. Also under Fire Tests 3E2 and for further information and detailed drawings see Industrial Section, pp. XIV–XV, Associated Metal Lath Manufacturers.
For detailed drawing of Vaulting with metal lath, see Industrial Section, page XXII, Northwestern Expanded Metal Co.
(*d*) For information on wired glass in this issue see Industrial Section, p. VIII, Mississippi Wired Glass Co. The application of wired glass will be referred to under Building Construction in April, Serial No. 4, and is included in many of the Reports under 3E1.
(*e*) Gypsum for floors and partitions will be referred to in Section 2, April.
(*f*) For information on the use of asbestos as a roofing material, see Industrial Section, p. XXXVIII, H. W. Johns-Manville Co.

3E1 *Reports on Buildings Under Fire, and*

3E2 *Reports on Fire Tests of Materials*

(See, also, Buildings and Structures in General, Serial No. 4.)

(*a*) U. S. Geological Survey (2A1*g*), Bulletin 324, 163 pp. text, 55 plates and two maps. (50 cts.) "The Effects of the San Francisco Earthquake and Fire on Various Structures and Structural Materials," 1907, Richard L. Humphrey. Pp. 14–61. Also contains "The Effects of the San Francisco Earthquake and Fire on Buildings, Engineering Structures and Structural Materials," J. S. Sewell. Pp. 62–130. Also, "The Earthquake and Fire and Their Effects on Structural Steel and Steel-frame Buildings," Frank Soulé. Pp. 131–158.
(*b*) Same Bulletin gives over forty references for other articles particularly with respect to the earthquake and effects.
(*c*) Survey, Bulletin 370 (2A1*g*), 99 pp., illustrated. (30 cts.) "The Fire Resistive Properties of Various Building Materials," Richard L. Humphrey. Contains results of tests of thirty panels of various building materials made by the U. S. Geological Survey with a furnace in the Underwriters' Laboratories, Chicago.
(*d*) See the twelve "Special Fire Reports" listed under publications available in the files of the National Fire Protection Association 3A3*f* 1–12.
(*e*) See "Index" to all publications of the N. F. P. A. (3A3*h*) including *The Quarterly* which contains in each issue matter of interest to architects and other constructionists. Seventeen references to Conflagration alone. Fifteen references to Records of Fires in Fire-resistive Buildings.
(*f*) "Concrete Storehouse of Naumkeag Steam Cotton Company Which Successfully withstood the Salem Conflagration," Inspection Dept. Associated Factory Mutual Fire Insurance Companies 3A7*a*4*o*.
(*g*) See "Burning of the Edison Phonograph Works," and other publications of the Inspection Department, Associated Factory Mutual Fire Insurance Companies. 3A7*a* and *b*.
(*h*) "Report of the Committee on Edison Fire." Cass Gilbert, Chairman. Published by American Concrete Institute (1E4*f*), 1915.
(*j*) "Report on a Fire in Reinforced Concrete Warehouse at Far Rockaway, N. Y., November 10, 1916," Committee on Construction of Buildings, National Board of Fire Underwriters (3A4). Upon application to Ira H. Woolson, Consulting Engineer to the Committee.
(*k*) See "Fire-Prevention and Fire-Protection," Joseph Kendall Freitag.
(1) "Experimental Testing Stations," Chapter V.
(2) "Fires in Fire-resisting Buildings, and Conflagrations," Chapter VI.
(*l*) See "The Fireproofing of Steel Buildings," Joseph Kendall Freitag.
(1) "Fires in Fireproof Buildings," Chapter III.
(2) "Tests of Fireproof Floors," Chapter IV.
(*m*) See "Fire Tests of Floors in the United States" (under "Horizontal and Sloping Features," Serial No. 4D).
(*n*) See "Tests of Fire-resistive Construction," Proceedings N. F. P. A. (3A4*h*), Vol. 18, p. 217.
(*o*) For reports of tests on metal-lath construction made at Cleveland, and at New York, see "Metal Lath Hand Book" 3C10*a*, and Industrial Section, p. XIV.
(*p*) See 3E3*g* for progress report on fire tests.
(*q*) See Report of Committee of American Society of Civil Engineers on San Francisco Fire (to which reference is made in Industrial Section on p. XV).

3E3 *The U. S. Bureau of Standards and Fire Tests*

(*a*) With an annual life and property loss conservatively estimated as some thousands of lives and exceeding $300,000,000, a per capita loss nearly ten times as great as that found in the leading European countries, and this in spite of the most expensive and efficient fire-fighting equipment in the world, it would be a neglect of duty not to direct attention to the pressing needs for greater activities on the part of the National Government in the nation-wide movements to diminish this unpardonable waste of our national resources. The Natio nal Fire Protection Association, through its 125 or more allied engineering, industrial, commercial, municipal, and state associations, has done, and is now doing, splendid and unselfish work in this great public movement. It is the moral duty of the National Government to lend its fullest coöperation and assistance to this great work.

The field of activity in which the Bureau can be of the greatest service to the many organizations now enlisted in the fight against our enormous fire-waste is in the determination of fundamental engineering data to serve as a basis for the revision and reconstruction of state and municipal building codes. The important investigations now under way that are expected to yield data of direct practical application are the fire-tests of structural steel building columns, fireproofed in different ways, and of reinforced concrete columns of different aggregates and types of construction.

It is imperative that tests of floors, roofs, fire-resisting doors, shutters, and windows, must be included in this program, and must be carried along with the column and partition tests, if we are to be in a position at the end of a few years to lay before American engineers a comprehensive set of data to enable them to redraft our present unsatisfactory codes in the light of the best modern engineering experience.—From 1916 Report of Director Stratton to the Secretary of Commerce.

Fire-Tests of Building Columns

(*b*) Many millions of dollars are annually spent on the construction of buildings the integrity of which, in the event of fire, is dependent on the behavior of the steel columns supporting the structures. Very little engineering data are available which would permit of any certain conclusions as to the thickness and kind of fireproof covering required to render these columns safe under various conditions of fire-hazard. The requirements of city building codes on these questions are so different that it is evident that some codes are either requiring an unnecessarily thick fireproof covering, with undue increase in construction costs, or else other codes are requiring too thin coverings, with undue increase in danger to the stability of the structure under the existing fire-hazards.

The fire-tests on building columns are being carried out jointly by the Underwriters' Laboratories of Chicago, the Mutual Laboratories of Boston, and the Bureau of Standards. The first series of tests was originally planned to include about seventy structural steel columns and about six reinforced concrete columns. During the past year, while the steel columns were being fabricated and assembled and the various aggregates and covering materials were being brought together from different parts of the country, a detailed syllabus of the proposed tests was prepared and sent to several hundred engineers and architects interested in fireproof building construction as well as to various technical societies with a request for criticisms and suggested modifications of the proposed program of tests. At a conference of the several laboratories jointly conducting these tests, held at Pittsburgh in March, 1916, the many valuable suggestions and criticisms called forth by the publication of the syllabus were carefully considered, and the program of tests was finally revised. While the original program was modified in many minor but important details in accordance with the suggestions that had been received, the most important modification consisted in the addition of about twenty fireproofed structural steel columns which will be subjected to the combined action of fire and water, the water being applied after a one hour's exposure to fire.

The specially designed furnace, which is being erected by the engineers of the Underwriters' Laboratories especially for these tests, together with the 200-ton hydraulic jack for applying loads of fifty tons to the columns while exposed to fire, the trolley cranes for moving the walls of the furnace to permit of the application of water, have been installed, with the exception of the burner for heating the furnace by means of natural gas. The steel columns, representative of the types commonly employed in building construction, are now being covered with concrete, plaster on metal lath, clay tile, and gypsum tile coverings. Thermocouples are being built into the column coverings to enable the temperature changes of the structural steel to be followed throughout the course of the fire-test. Some of the important parts of the specially designed deformeter for measuring the amount of deformation produced in the column during the test have been completed. It is confidently believed that the results of these tests will be a most important contribution to modern structural engineering.—From Report, Bureau of Standards, 1916, 1A2*a*.

[NOTE.—There has just been received a document issued jointly by the Bureau of Standards, the Associated Factory Mutuals and the National Board of Fire Underwriters with diagrams and descriptive details of the above tests. This is entitled "Prospectus of Fire Tests of Building Columns."]

Thermal Efficiencies of Column Coverings.

(*c*) Tests have been under way during the past two years at the Pittsburgh branch laboratories of the Bureau on the rate of temperature rise within cylindrical specimens of the various materials used for fireproofing building columns. A special gas heating furnace was built for this work, and a large number of cylinders of different materials were tested with thermocouples mounted axially in the cylinder and with their junctions at different distances from the surface. Cylinders similar to the cylinder under test were placed at each end of the latter, in contact with its end faces, to minimize the disturbing effects of heat losses from the ends. This investigation is practically completed with the exception of a few tests to round out the series. It will be prepared for publication as soon as time will permit.

(*d*) Some tests on the compressive strength of steel at high temperatures, briefly reported in the last annual report, showed that at 600 degrees C. the compressive strength had decreased to 60 per cent, and in the next 50 degrees C. (i. e. at 650 degrees C.) to about 30 per cent of its value when cold. Such data are of fundamental importance in their bearing on the behavior of structural steel when exposed to fire conditions.—From Report, Bureau of Standards, 1916, 1A2*a*.

Panel-Testing Furnace.

(*e*) The panel-testing equipment was installed during the year. The plant has been operated several times to test its performance and has been found admirably suited to the work for which it has been designed. The equipment that is now available for this work is probably the

most complete that has ever been built, and its efficient utilization should include as a minimum thirty panel tests a year.

Steps have been taken to secure the coöperation of prominent engineers, representatives of engineering and technical societies, and of manufacturing associations, in the formulation of a comprehensive program of tests of the fire-resisting properties of structural materials.—From Report, Bureau of Standards, 1916.

(*f*) For tests at the Bureau on Fire Brick see 3D4*c*.

(*g*) As we go to press there has been received a copy of a new publication of the Bureau of Standards—Technologic Paper No. 70—entitled "Durability of Stucco and Plaster Construction."

This paper presents a report of progress in an investigation of stucco and plaster undertaken by the Bureau of Standards five years ago in coöperation with the Associated Metal Lath Manufacturers. In 1915 a test building, 200 feet long, was erected, having fifty-six panels representing the common types of stucco construction including a variety of mixtures on metal lath, wood lath, hollow tile, brick, concrete, block, plaster board, gypsum block and concrete bases. Examination of the panels six months after completion showed that a number were in poor condition. About forty were rated as satisfactory, the remainder being in various stages of deterioration. It is evident that the smooth type of finish known as the sand-float finish is well adapted to bringing out the small defects, such as cracks, blotches, uneven texture, etc. This paper contains suggestive information, but definite recommendations are deferred until further service-test results are known. Those interested may obtain a copy by addressing a request to the Bureau of Standards.

For the Underwriters' Laboratories and Fire and Other Tests, see Serial No. 4, April, with report of the Institute's Special Committee.

3A3 List of Publications Available in the Files of the National Fire Protection Association

See also, 3A3, on page 133, of which this is a classified extension, correct to March 1, 1917.

Membership in the Association is open to any society, corporation, firm or individual interested in the protection of life or property against loss by fire. Annual dues, individuals, $6.

All the valuable engineering and popular literature issued by the Association is sent, as issued, to every member.

The Association is always glad to send samples of its publications to prospective members.

Copies of the Standards, model state laws and city ordinances, committee reports, and miscellaneous publications given below, will be mailed on application to

FRANKLIN H. WENTWORTH, *Secretary,*
87 Milk Street, Boston, Mass.

NOTE.—Where no price is quoted the publications are free. Prices given are for single copies. Discounts for publications in quantities can usually be given.

(*a*) *Standard Regulations for Fire-Protection and the Safeguarding of Hazards:*

1. Acetylene Gas Machines, Oxy-Acetylene Heating and Welding Apparatus and Storage of Calcium Carbide.
2. Blower Systems for Heating and Ventilating, Stock and Refuse Conveying.
3. Dip Tanks, Construction and Installation.
4. Electric Wiring and Apparatus (National Electrical Code).
5. Electrical Fittings, List of Approved.
6. Fire Brigades, Private.
7. Fire Pumps, Steam.
8. Fire Pumps, Rotary and Centrifugal and Electrical Driving of Fire Pumps.
9. Fuel Oil, Storage and Use, and Construction and Installation of Oil-burning Equipments.
10. Gas Shut-Off Valves.
11. Hazardous Liquids, Containers for Storing and Handling.
12. Hose Couplings and Hydrant Fittings, for Public Fire Service.
13. Hose-Houses for Mill-yards, Construction and Equipment.
14. Internal Combustion Engines (gas, gasolene, kerosene, fuel-oil) and Coal-gas Producers (pressure and suction systems).
15. Lightning, Suggestions for Protection against.
16. Municipal Fire-Alarm Systems.
17. Nitro-Cellulose Motion-Picture Films (storage and handling).
18. Protection of Openings in Walls and Partitions.
19. Signaling Systems Used for the Transmission of Signals Affecting the Fire-hazard.
20. Skylights.
21. Sprinkler Equipments, Automatic and Open Systems.
22. Steam Pump Governors and Auxiliary Pumps.
23. Tanks (gravity and pressure), Concrete Reservoirs and Valve-pits
24. Vaults.

NOTE.—The above Regulations have also been adopted by and are the official standards of the National Board of Fire Underwriters.

(*b*) *Suggested State Laws for regulating fire-hazards:*

1. State Fire Marshal Law (of the Fire Marshals' Association of North America).
2. Explosives, To regulate the manufacture, storage, sale and use of
3. Explosives, To regulate the transportation and carriage of.
4. Matches, To regulate the manufacture, storage, sale and distribution of.

(*c*) *Suggested Municipal Ordinances for regulating fire-hazards:*

1. Chimneys and Flues, To provide for the safe construction of chimneys, flues and fireplaces.
2. Ordinances for Small Municipalities (including Building Code).
3. Fireworks, To prohibit the discharge or firing of fireworks and other pyrotechnic display and to limit their storage.
4. Explosives, To regulate the manufacture, keeping, storage, sale, use and transportation of.
5. Inflammable Liquids and the Products Thereof, To regulate the use, handling, storage and sale of.
6. Inspection of Premises by the Fire Department (with sample of Inspection Blank).
7. Matches, To regulate the manufacture, storage, sale and distribution of.
8. Motion-Picture Machines, To regulate the installation, operation and maintenance of.
9. Theatres, To regulate the construction and equipment of.

NOTE.—The above Model Laws and Ordinances have also been officially adopted by the National Board of Fire Underwriters.

(*d*) *Educational:*

1. Field Practice. Inspection Manual designed for the use of property owners, fire departments and inspection offices in safeguarding life and property against fire. This handbook is printed on bond paper and is substantially bound in real leather. The dimensions (4½ x 6½ inches) make it a most convenient size for the coat-pocket. This information represents the latest thought of the leading American fire-prevention engineers, and is not elsewhere accessible. Price, postpaid, single copies, $1.50.
2. Story of the National Fire Protection Association.
3. Syllabus for Public Instruction in Fire-Prevention.
4. A Campaign to Prevent Fire, address of Franklin H. Wentworth. Published by the Canadian Manufacturers' Association.
5. Fire-Prevention, Its Object and Possible Results, C. Heller.

5a Fire-Prevention Through Adequate Power and Common Sense, Clement J. Driscoll.

5b. Topics for Fire-Prevention Meetings.

6. Fire Waste Overtaking Insurance Capital, Committee on Publicity and Education.
7. Fire Losses in U. S. $30,000 an Hour and What Individuals and Communities Can Do to Reduce Them, Committee on Publicity and Education.
8. Will You be a Fire Warden and Life Saver? (1) In the Home. (2) In the Store and Factory. Committee on Publicity and Education.

8a. Safeguarding School Children from Fire. Price, 15 cents.

9. Fire-Prevention Work in Small Cities and Towns, Committee Report.
10. Debarment of City Conflagrations, Albert Blauvelt.

11. Inspection of Buildings and Contents by Uniformed Members of Fire Departments, Fire-Chief H. C. Bunker, Cincinnati, Ohio.
11a. Building Inspection by Firemen: Suggestions for systematic procedure, James Crapo, Battalion Chief, Chicago Fire Department.
12. Individual Liability Laws for Fires Due to Carelessness or Neglect.
13. Public Fire Departments, George W. Booth. Price, 5 cents.
13a. Volunteer Fire Departments: Organization and Conduct, Harry W. Bringhurst.
14. Architects: General Information Regarding Fire Insurance Requirements.
15. Fire Exits, Outside Stairs for: Recommendations for their Construction and Installation. Price, 5 cents.
16. Exit Drills for Factories, Schools, Department Stores and Theatres: Suggestions for Their Organization and Execution. Price, 5 cents.
17. The Wooden Apartment House, the Fight Against it in Brookline, Mass., Gorham Dana.
17a. Dwelling Houses: Suggestions for Their Construction and Protection, National Board of Fire Underwriters. Price, 10 cents.
17b. Shingle Roofs as Conflagration Spreaders, National Board of Fire Underwriters. Price, 5 cents.
18. Fire Stories for Children, Committee on Publicity and Education.
19. Fire-Prevention Day Programs for Public Parade, School Exercises, Evening Assembly. Price, 10 cents.
20. Fire-Hazards Due to Trolley Circuits, Samuel S. Wyer.
21. Fire-Hazards on the Farm.
22. Automobile Fire Apparatus, Committee Report, 1913.
22a. Automobile Combination Pumping Engine and Hose-Wagon.
22b. { Gasolene Combination Chemical Engine and Hose-Wagon. { Gasolene Combination Service Ladder-Truck.
23. High-Pressure Systems for Fire Service, Committee Report.
24. Fire-Service Connections, Protection of, H. O. Lacount.
25. Fire-Hose: The need for a better quality of Public Department Fire Hose, Committee Report.
26. Fire-Pumps: Notes and Suggestions on Same, Associated Factory Mutual Fire Insurance Companies. Booklet, 53 pages, illustrated. Price, 15 cents.
27. National Standard Hose Couplings and Hydrant Fittings for Public Fire Service: Progress in their Adoption by Cities of United States, F. M. Griswold.
28. Elevated Tanks: Their Improved Design and Construction, W. O. Teague. 23 pages. Price, 5 cents.
29. Water Barrels and Pails for Fire Protection, W. R. Ruegnitz. Price, 5 cents.
30. Freezing Preventives for Water Pails and Chemical Extinguishers, J. Albert Robinson. Price, 5 cents.
31. Fire-resistive Construction, Specifications for, Committee Report.
31a. Office Building, Grade A, Specifications for Construction of.
32. Factories and Their Fire Protection, Franklin H. Wentworth. Price, 5 cents.
32a. Mill Construction Buildings, C. E Paul. Price, 5 cents.
32b. Structural Defects, Suggestions for Their Elimination and Protection. Price, 5 cents.
33. The Automatic Control of Fire, Fitzhugh Taylor. Price, 5 cents.
34. Explosions, Dust and Smoke, P. D. C. Steward.
35. Smoke and Water Damage, F. E. Roberts.
35a. Sprinkler Leakage, Albert Blauvelt. Price, 5 cents.
36. Uses of Wood in Building Construction, Committee Report. Data of tests on inflammability of untreated wood and of wood treated with fire-retarding compounds. 55 pages, illustrated. Price, 25 cents.
37. The Permanent Fireproofing of Cotton Goods, William Henry Perkins. Price, 5 cents.
38. Cordage Fibers: Their Physical Properties, Hazards and Characteristics, T. E. Sears. Price, 5 cents.
39. Color, Paint and Varnish Factories: Processes and Hazards, F. E. Roberts. 31 pages. Price, 5 cents.
40. Lumber and Lumber Drying, with Notes on Steam Jets, Committee Report. Price, 5 cents.
41. Tanneries: Suggestions for Their Improvement as Fire-Risks, Committee Report. Price, 5 cents.
42. Shoe Factories: Suggestions for Their Improvement as Fire-Risks, Committee Report. Price, 5 cents.
43. The Cooperage Industry, J. Albert Robinson.
44. Cold-Storage Warehouses: Suggestions for Their Improvement as Fire-Risks, Committee Report. Price, 5 cents.
44a. Refrigerating Machinery Explosions and Fires. Price, 5 cents.
45. Inspected Mechanical Appliances. Published by Underwriters' Laboratories, Inc. List includes inspected devices and materials, fire appliances, gas, oil, mechanical and chemical appliances. (Revised semi-annually—January and July.)

(e) Special Bulletins:

1. Dwelling-House Hazards: How to Prevent Fires in the Home. 4 pages, illustrated. Price, $1 per 100, $7.50 per 1,000.
2. The Evil Wooden Shingle. 4 pages, illustrated. Prices, $1 per 100, $7.50 per 1,000.
3. Chimneys, Flues and Fireplaces: How to Build Them. 4 pages, illustrated. Price, $1 per 100, $7.50 per 1,000.
4. School-Houses, Fire Protection of. 16 pages, illustrated Price, 10 cents per copy. Special discount for quantities.
5. Holiday Bulletins. Illustrated four-page bulletins are prepared for circulation preceding Independence Day and Christmas Day, warning against the hazards of fireworks and inflammable decorations, temporary electric wiring, etc. Price, $1 per 100, $7.50 per 1,000.
6. Frozen Water-Pipes: A Winter Fire-Hazard. Price, 60 cents per 100, $5 per 1,000.
7. Electric Pressing-Iron Fire-Hazard. Price, $1 per 100, $7.50 per 1,000.
8. Storage of Bituminous or Soft Coal. Price, 60 cents per 100, $5 per 1,000.

(f) Special Fire Reports:

1. The Baltimore Conflagration, February 7, 8, 1904. 130 pages, illustrated. Committee Report. Price, 25 cents.
2. Parker Building Fire, July 10, 1908. 56 pages, illustrated. Report by New York Board of Fire Underwriters. Price, 15 cents.
3. The Equitable Building Fire, January 9, 1912. 50 pages, illustrated. Report by New York Board of Fire Underwriters. Price, 15 cents.
4. Binghamton Clothing Company Fire, July 22, 1913. 12 pages, illustrated. Committee Report. Price, 10 cents.
5. Melvin Apartment House Fire, Boston, April 14, 1914. 4 pages, illustrated. Price, 1 cent.
6. Cleveland Lumber and Public Property Fire, May 25, 1914. 8 pages, illustrated. Report by Cleveland Inspection Bureau. Price, 5 cents.
7. *Salem, Mass., Conflagration, June 25, 26, 1914. 16 pages, illustrated, maps. Price, 10 cents.
8. Edison Phonograph Works, West Orange, N. J., December 9, 1914. 60 pages, illustrated. Price, 25 cents.
9. Diamond Candy Company Factory Fire Holocaust, Brooklyn, N. Y., November 6, 1915. 16 pages, illustrated. Price, 5 cents.
10. Paris, Texas, Conflagration, March 21, 1916. 8 pages, illustrated, map. Price, 5 cents.
11. Nashville, Tennessee, Conflagration, March 22, 1916. 8 pages, illustrated, map. Price, 10 cents.
12. Augusta, Georgia, Conflagration, March 22, 1916. 16 pages, illustrated, map. Price, 10 cents.

*Out of print.

(g) No Smoking:

Signs, black ink on red card. Price, 5 cents. Discount for quantities.

(h) Publications for Members Only:

News Letter. A monthly bulletin of special information on current items of interest to those charged with the responsibility of safeguarding life and property from fire.

Proceedings of Annual Meeting. Containing stenographic report of transactions of the Association and the discussions incident to the adoption of its standards. Extra copies, $1.

Quarterly Magazine of the Association. A chronicle of the Association's activities, with valuable contributions of articles on fire-prevention and -protection, and special hazards, and compilations of fire statistics on various classes of property. Extra copies, 50 cents.

Year-book and directory. Complete list of members with addresses.

Index to all subjects covered in the printed records. (Proceedings, Quarterly, etc.)

Special reports, bulletins, etc., issued during the year.

[NOTE.—Each member receives one copy of all the Association's publications current during the year of his membership. Membership year begins with date of election.]

3A4 List of Publications Available in the Files of the National Board of Fire Underwriters

(See, also, 3A4 on page 134, of which this is a classified extension, correct to March 1, 1917.)

Copies may be obtained, without charge (except *d*3, upon which a charge of 10 cents is made to cover postage), by qualified inquirers, by addressing The National Board of Fire Underwriters, 76 William St., New York City.

(*a*) Suggested Regulations of the National Board of Fire Underwriters for the installation of devices. Recommended by the National Fire Protection Association.

The list embracing these is the same as the (*a*) list of the N. F. P. A. on page 144, with the addition of the following:

25. Gasolene Vapor Gas Lighting Machines.
26. Railway Car Storage.
27. Electrical Appliances, List of Approved.
28. Underwriters' Laboratories.

The latter two are the same publications as mentioned by the Underwriters' Laboratories.

(*b*) Suggested State Laws issued by the N. B. F. U. For use by State Officials in framing regulations on matters pertaining to Fire Prevention and Building Construction.

These are the same as the four mentioned in the (*b*) list of the N. F. P. A.

(*c*) Suggested Separate City Ordinances issued by the N. B. F. U. for use by City Officials in framing regulations on matters pertaining to Fire Prevention and Building Construction.

*1. To Regulate the Installation, Operation and Maintenance of Motion Picture Machines, and the Construction and Arrangement of Picture Booths and Audience-Rooms.
*2. To Regulate the Manufacture, Storage, Sale and Distribution of Matches.
*3. To Regulate the Manufacture, Keeping, Storage, Sale, Use and Transportation of Explosives, in Cities Whose Population Exceeds 100,000 Inhabitants.
4. To Regulate the Manufacture, Keeping, Storage, Sale, Use and Transportation of Explosives, in Villages or in Cities Whose Population Does Not Exceed 100,000 Inhabitants.
5. To Govern the Construction and Operation of Laundries.
*6. To Regulate the Construction and Equipment of Theatres.
*7. To Regulate the Use, Handling, Storage and Sale of Inflammable Liquids and the Products Thereof.
8. Shingle Roofs as Conflagration Spreaders: An appeal to the Civil Authorities and Civic and Commercial Bodies. Contains an Ordinance for Fire-resistive Roof Coverings.

*These are evidently the same as 4, 5, 7, 8 and 9 in the (*c*) list of the N. F. P. A. 8 is listed D17*b* in N. F. P. A.

(*d*) Suggested Codes issued by the N. B. F. U. For use by State and City Officials in framing regulations on matters pertaining to Fire Prevention and Building Construction.

1. A Recommended Building Code, suitable for a city of any size and providing for fire limits, and regulations governing the construction, alteration, equipment, repair or removal of buildings or structures.
2. A Suggested Building Ordinance for Small Towns and Villages: Providing for fire limits and the construction and equipment of ordinary non-fireproof buildings.
3. Dwelling Houses: A Code of Suggestions for the Construction and Fire-Protection. Intended especially as an aid in in construction of isolated homes outside the control of building ordinances, and is addressed directly to the owners of dwellings, and to carpenters and builders who erect them.
4. A Code of abbreviated Ordinances for Small Municipalities, and containing ordinances providing for Fire Limits and the the Construction and Equipment of Buildings; the regulation of Garages; the regulation of Motion Picture Machines and Premises where operated; the Inspection of Premises by the Fire Department; also a blank form for use by the inspector; the Cleanliness of Streets, Alleys and Premises; the Burning of Refuse; the Storage of Explosives; Fire Escapes, and prohibiting the Discharge of Fireworks.

No. 3. will be found under D17*a* N. F. P. A. list.

3A7 List of Publications Available in the Files of the Inspection Department, Associated Factory Mutual Fire Insurance Companies

(See also 3A7 on page 136, of which this is a classified extension, correct to March 1, 1917.)

Single copies of these publications may be obtained on request without charge, except Nos. 9 and 45, and (*c*), which will be furnished at a price of 25 cents per copy. Where additional copies of any of the pamphlets are desired, a charge sufficient to cover the cost of printing will be made.

(*a*) *Pamphlets:*

1. "Anchorage of Roofs."
2. "Approved Electrical Fittings."
3. "Approved Fire Protection Appliances."
4. "Beltway Fires."
5. "Carbon Tetrachloride as a Cleaning and Solvent Agent."
6. "Centrifugal Fire Pumps—Specifications, and Rules for Electrical Driving." (Included in No. 20.)
7. "Cotton Conveying Systems from Bale to Opener Room."
8. "Dry-Pipe Systems of Automatic Sprinklers—Rules."
9. "Electric Light and Power Equipment—Rules."
10. "Fire Hose, Play Pipes and Hose Houses—Rules."
11. "Fire Pump Protection for City Risks (Paterson Fire)."
12. "Fires in Cotton Mills."
13. "Fuel Oil Installations for Furnaces and Engines."
14. "Gravity Tanks and Towers—Specifications."
15. "Installations for Handling Gasoline and Similar Oils."
16. "Installing Sprinkler Equipments—Rules."
17. "Laying Cast Iron Water Pipes in Factory Yards—Rules."
18. "Notes and Suggestions on Fire Pumps."
19. "Prevention of Large Loss in a Mutual Mill."
20. "Rotary and Centrifugal Fire Pumps—Specifications and Rules for Electrical Driving."
21. "Sawdust as an Extinguisher of Fires in Moderate Sized Tanks of Lacquer, Paint, etc."
22. "Sprinkler Protection in Picker Trunks, Dryers, etc."
23. "Steam Pump Governors and Auxiliary Pumps—Specifications."
24. "Underwriter Steam Fire Pumps—Specifications."
25. "Valves, Indicator Posts and Hydrants—Specifications."
26. "Water-tight Floors of Mill Construction."
40. "Concrete Storehouse."
41. "Fire Doors."
42. "Humidity for Preventing Fires in Rubber Factories."
43. "Mill Watchman."
44. "Edison Phonograph Works, Burning of."
45. "Dry Rot in Factory Timbers."
46. "Salem Conflagration."
47. "Fire Hazards in Charcoal."
48. "Mill Fire Brigades."
49. "Fire Protection of Pyroxylin Plastics (Celluloid)."

(*b*) *Leaflets:*

27. "Directions for Use of Red Tags on Closed Valves."
28. "Fire Brigades Inside Mill."
29. "Mill Fire Brigade Data and Sheets."
30. "Rotary Fire Pumps—Directions for Starting."
31. "Steam Fire Pumps—Directions for Starting."
32. "Weekly Inspection of Fire Protective Apparatus. A Suggestive Form of Blank."
33. "When Putting in Fire Protection—Things to be Considered."
34. "Failure of Public Water Supplies."
35. "Gage Connection for Use in Testing Main Controlling Valves."
36. "Longleaf Pine Factory Timber."

(*c*) *Report No. 5— Mill Construction:*

The work of the Insurance Engineering Experiment Station under direction of Boston Manufacturers Mutual Fire Insurance Company was taken over by The Associated Factory Mutual Fire Insurance Companies several years ago; notable among their publications was Report No. 5 on Slow Burning, or Mill Construction, which will be furnished at 25 cents a copy.

The Fire-Prevention and -Protection issue will be concluded in the April number, Serial No. 4, with the Section on General Building Construction.

Current Comments

Refer to 1E4:

We have recently received Bulletin No. 25, "Public Works of the Navy," under the cognizance of the Bureau of Yards and Docks and the Corps of Civil Engineers, U. S. Navy, for January, 1917; included in which is eleven pages giving bibliographies and abstracts of published articles on the "*Durability of Concrete in Sea Water.*"

Refer to 1E7b:

We are in receipt of a letter from Ernest McCullough, Chief Engineer Fireproof Construction Bureau of the Portland Cement Association, accompanying a copy of the "*Final Report of the Joint Committee on Concrete and Reinforced Concrete.*" He states that the Portland Cement Association purchased a few copies for distribution and as long as these copies are available they will be sent free upon request to architects, engineers and contractors.

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